Balistes ~~extra marginatus, Gm.~~ vidua

D. 1-1-31; A. 27; P. 15; C. 15; V. 1.

Having collected many examples of this Balistes at three remote groups of islands, I observed two distinct forms which are probably sexual varieties. One is deeper, both anteriorly and posteriorly than the other, and the anal fin of the former, which contains several rays deep, is also deeper anteriorly. The more slender variety, which we have figured, is thrice as long as the distance between the origin of its soft dorsal and anal fins. The dorsal outline is less arched than in the deeper fish, and, consequently, the upper profile of the head is not so precipitate in its descent to the snout. The head comprises about a fourth of the total length; its upper line is moderately convex. The scales are small, densely granulated, and there exists no carinature on the caudal trunk. The eyes are oval, their length enclosing

five or six times in the length of the head. The petric bone is not quite so prominent as usual, is less asperous.

The dorsal spine, which in the more slender variety is shorter than the other, is robust, obtuse and asperous in front. The space between the origin of the two fins is longer than usual, being a trifle more than the length of the head. The soft dorsal commences at a point exactly midway between the end of the snout and the tip of the tail. It extends over a base which is twice its own height, and the fin tapers rather rapidly posteriorly. The anterior upper margin is very slightly concave and somewhat rounded off behind. The anal is of a similar structure to the fin above, but shorter along its base. The deeper variety as before mentioned has a deeper anal, which is supported by fewer rays. The pectorals are small and rounded. The caudal trunk is also small, and the fin of moderate size.

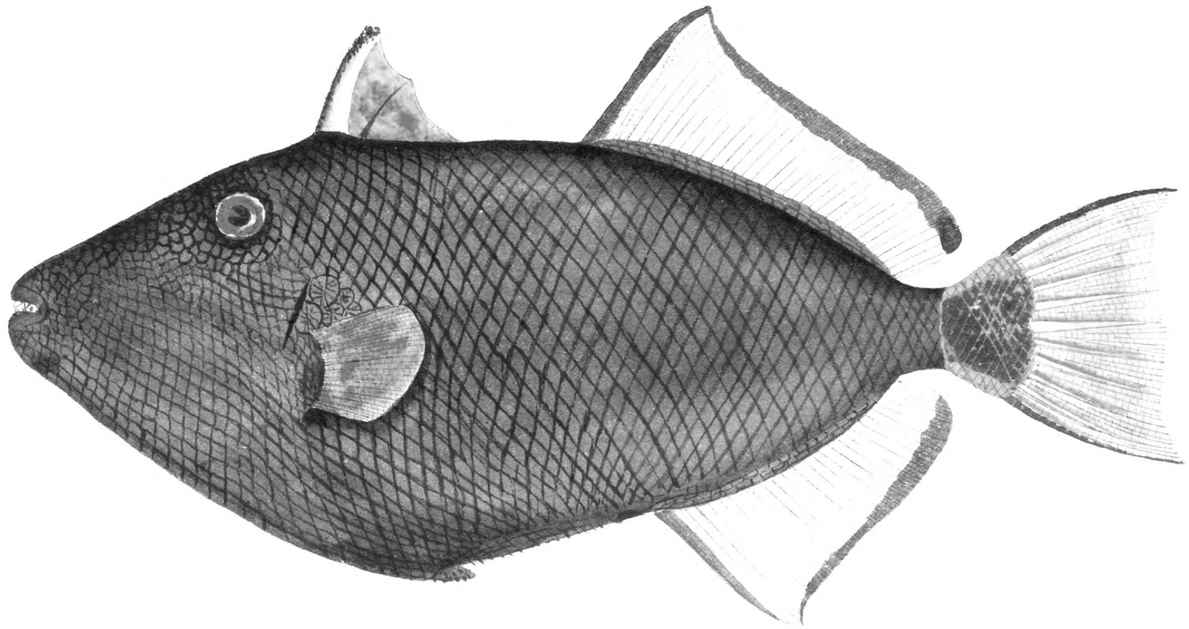
convex behind and the corners are triangularly produced.

Color deep violaceous black. Irides crimson. The enlarged hinder end of the caudal trunk white. The anterior dorsal membrane umber. Pectorals yellow-banded, with a pale reddish tinge and edged above and beneath with black. Dorsal and anal white, margined with black.

Length, 10 inches.

Habitat: Kingsmill Isls. Society Isls. Sandwich Isls.

At Tahiti the native name of this species is "Oiri tea"



Balistes vidua

Balistes ~~alternaspinosus, Gill.~~ niger

D. 1-2-26; A. 1-23; P. 13; C. 4, 8, 5, 1.

The head, as compared to the total length is as two to seven, and its upper profile is slightly convex. The eyes are small, their length entering four and a half times in the length of the head, and one and a half between their own orbit and the base of the dorsal spine. The scales are rather small, closely granulated with acute papillae, which are directed posteriorly. Those on the hinder portion of the body and caudal trunk are furnished with small spines directed anteriorly, and disposed in seven or eight horizontal rows. The depth of the body between the origin of the soft dorsal and anal is more than one-third the length of the fish.

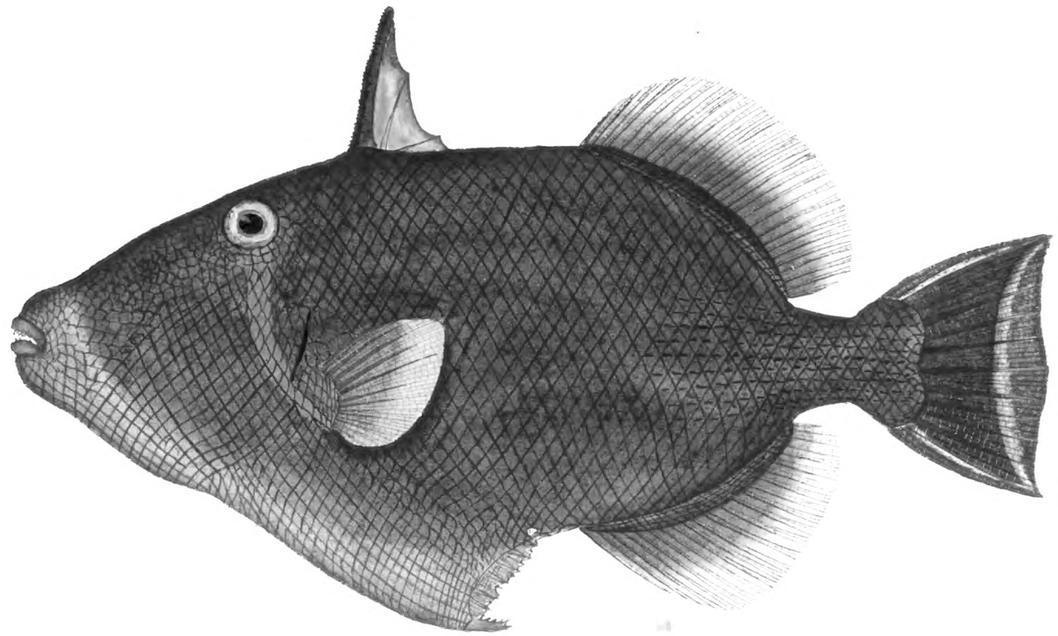
The dorsal spines are nearly slender, scabrous, obtuse, and its hinder membrane is quite narrow. The soft dorsal is gently arched in outline, the height less than half the length of its base, which latter equals one fourth the length of the whole fish. The anal is

much deeper anteriorly and tapers more rapidly than the fin above. Pectorals rounded off at the corners. The caudal is bicuneiform posteriorly. The ends of the pelvic bone and the bone edge of the abdomen are bluish.

Color olivaceous brown, hind, lower part of the head, breast and belly, of a violet hue. A tinged green band descends from the eye to the lower base of the pectorals. Sides golden yellow, marginated with brown. The anterior dorsal membrane is amber yellow, shaded off with dusky; caudal olivaceous brown, marginated above, beneath and posteriorly with white. All the other fins have their basal halves pervaginated in ink.

Length, 7 inches.

Habitat: Kingsmill Isles.



Balistes niger

Balistes ~~vetula, Linneus.~~ bursa

L. 1-2-28; d. 26; P. 13; C. 1, 5, 5, 1.

The head comprises about three-sixth of the entire length, and the upper profile between the interorbital space and the end of the snout is slightly concave. Eyes oval. The depth of the body between the origin of the soft dorsal and anal equals about or little more than one third of the entire length. Scales granulated; those on the body have each a central appressed spine directed posteriorly, and forming horizontal rows. Those on the trunk of the caudal and the median portion of the body are more developed and directed in front. The end of the pelvic bone is nodulated.

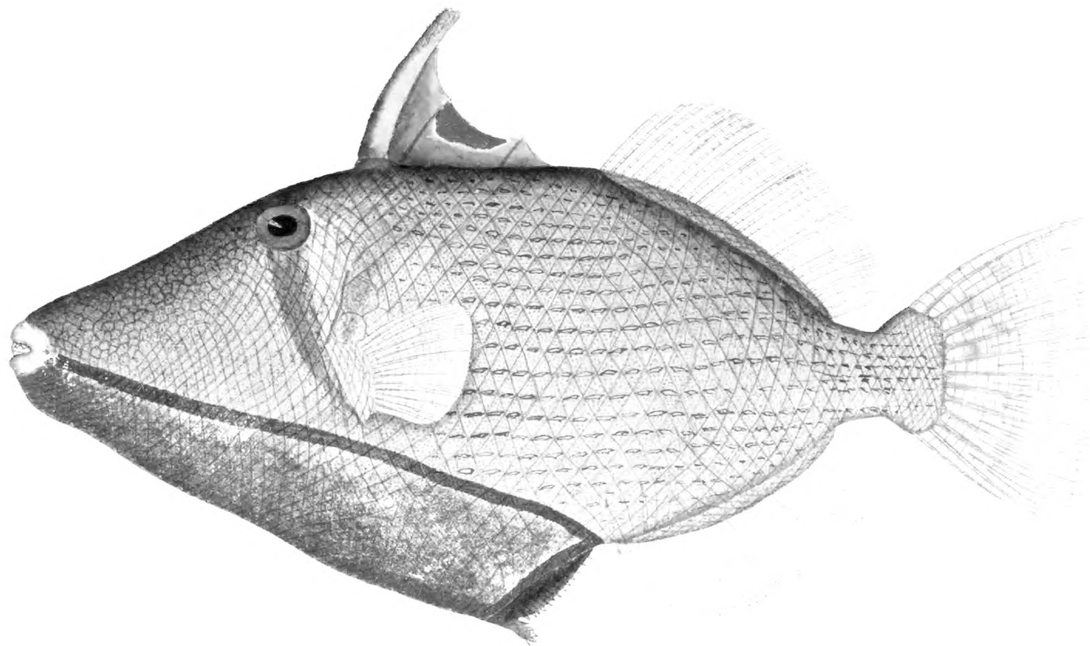
The dorsal spine is robust, slightly curved, truncate and serrated. The soft dorsal and anal differ but little in shape and size, both being gently arched, slightly tapering and their depth a little less than half the length of their base. Caudal convex, with the angles slightly produced.

Color light brownish gray, the lower part of the head, throat, and belly creamy white, the two colors separated by a pure white narrow ribbon which extends from the angle of the mouth to the vent, whence it passes forward around the pelvic bone. That part of the pelvic bone and edge of the belly external of the line is deep black. A tapering green band, margined with violet, descends from the eye and ends at the lower base of the pectorals. Lips pale reddish. Irides cupreous. The first dorsal is varied with green and white. All the other fins, except the caudal which is shaded with dusky, are colorless.

Length, 6 inches.

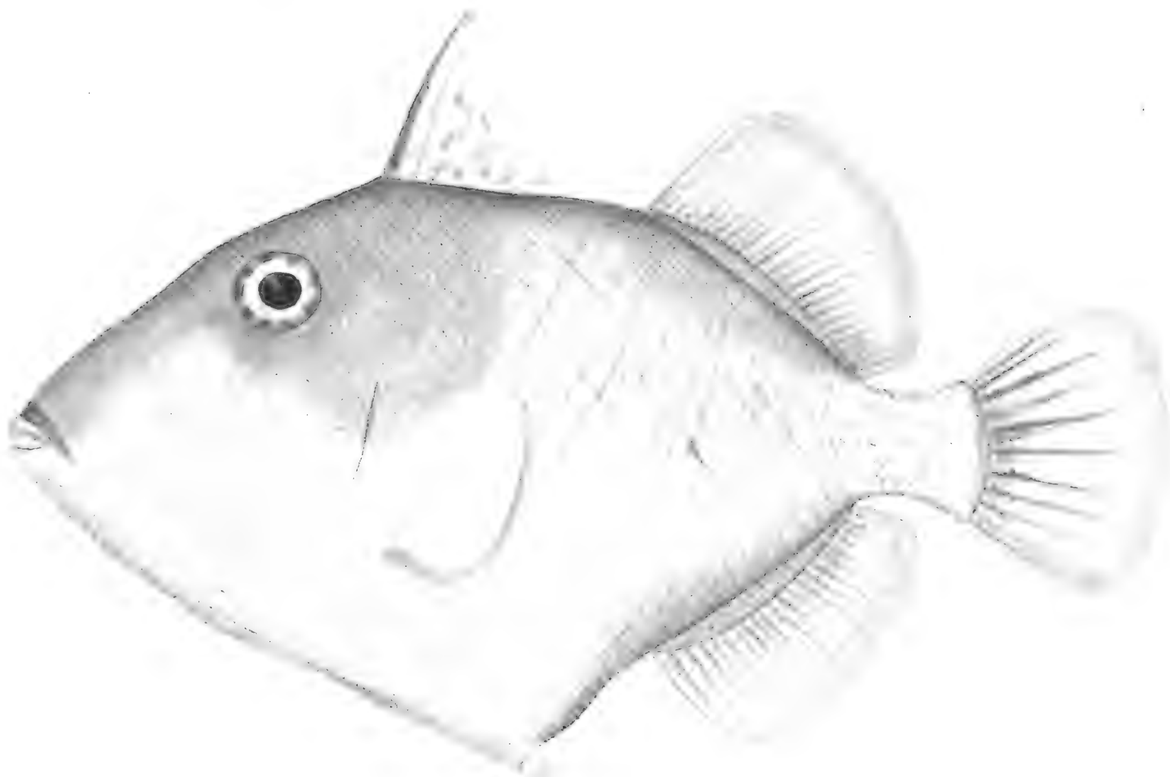
Habitat: Society Isls. Sandwich Isls.

A common species at the former location, but rare at the latter, where they attain a larger size, and are called "Humuhumu nukunuku".



Balistes bursa

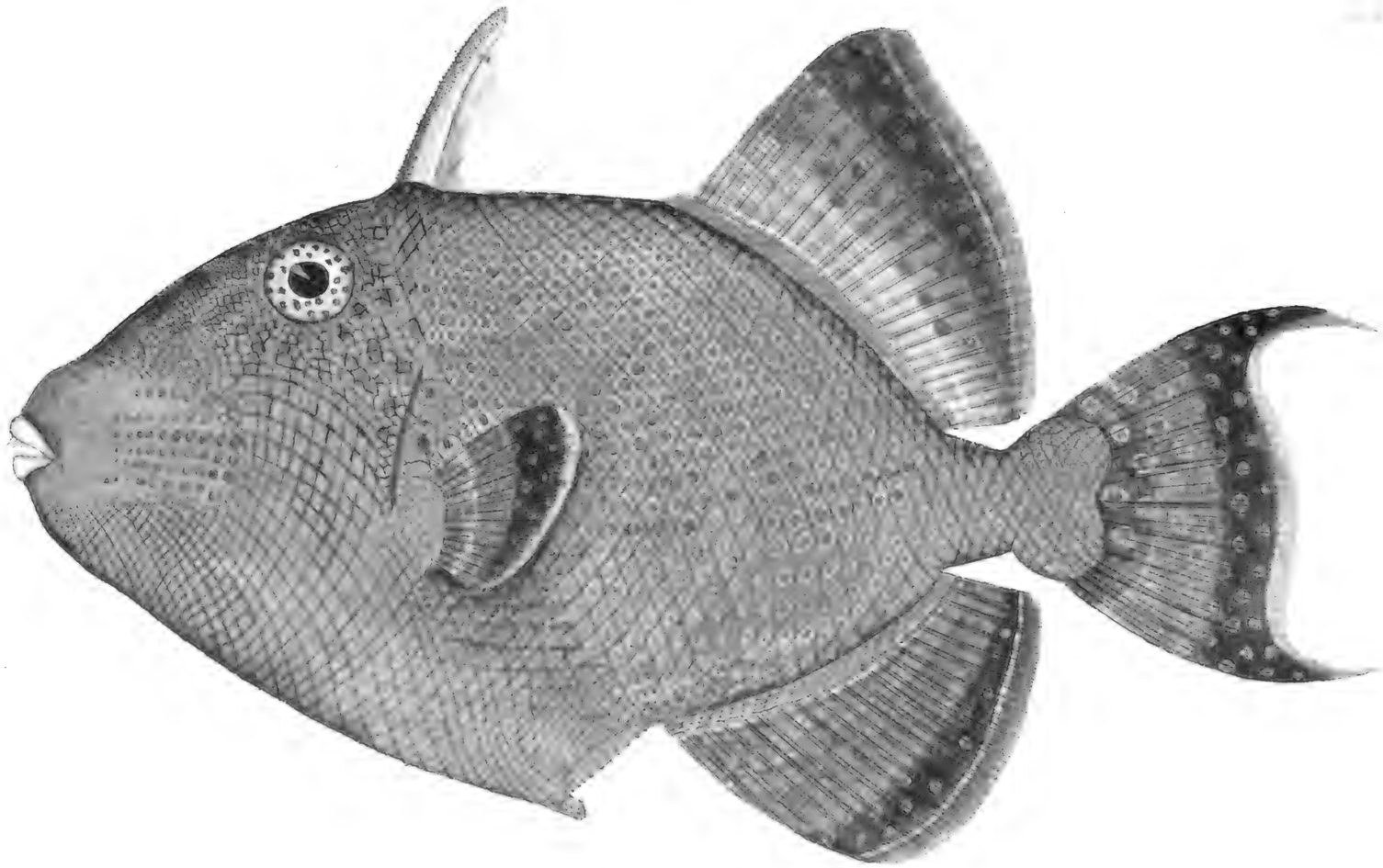
372



? Balistes viridescens

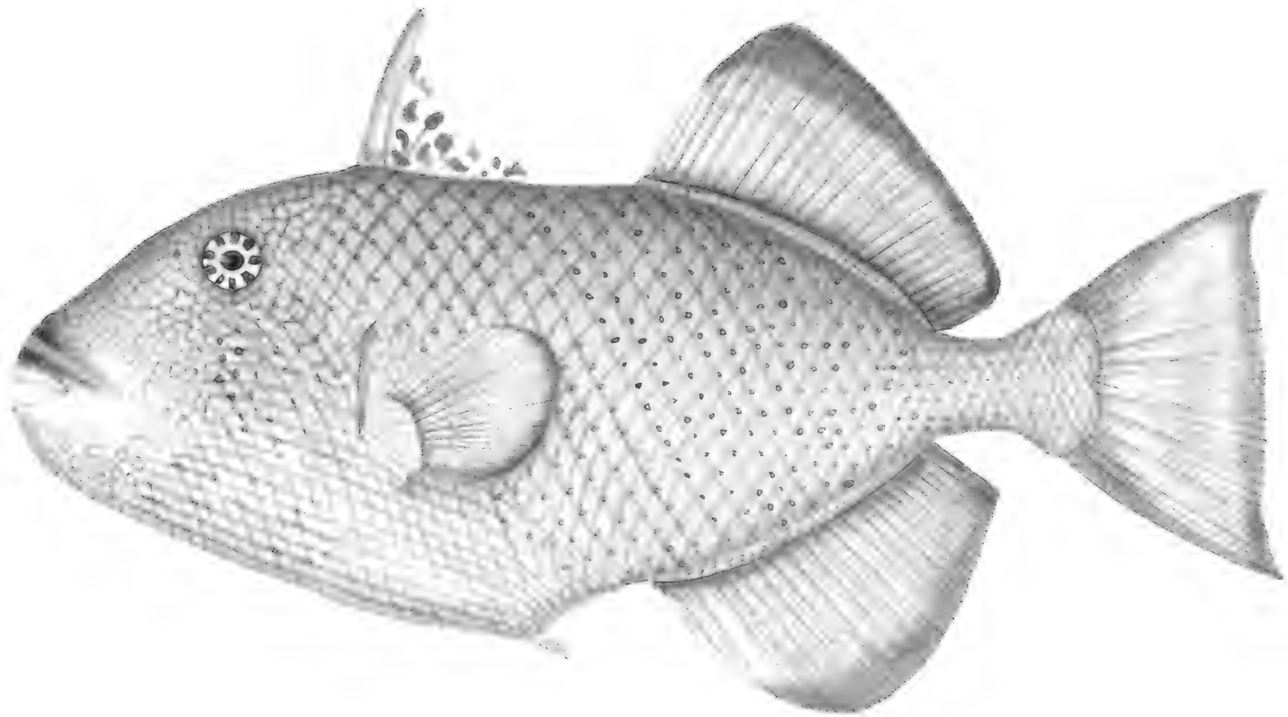
281

fuscus



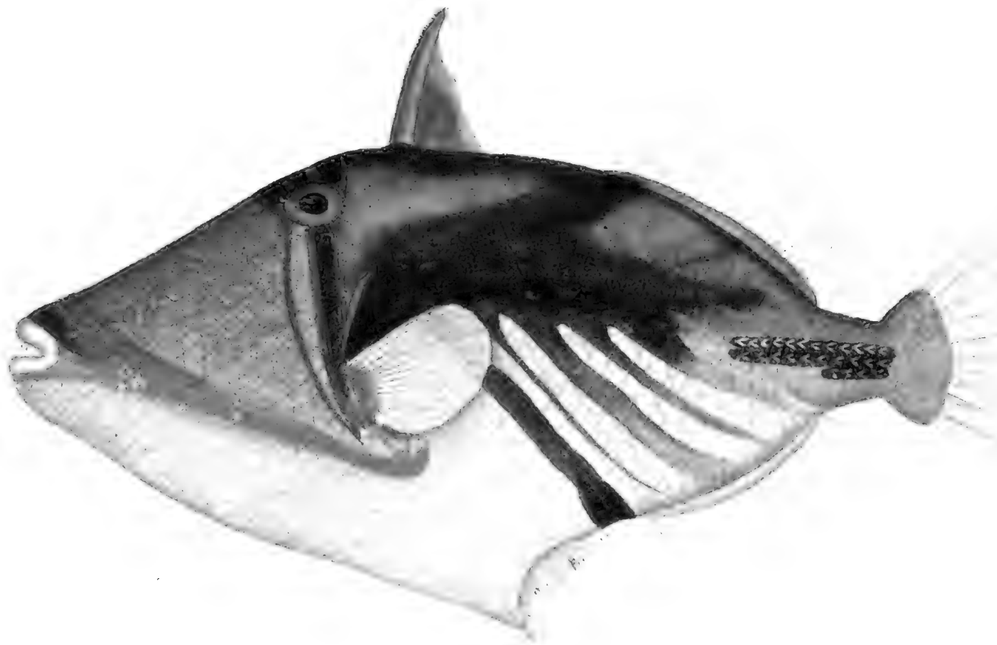
Taf. 168.
Balistes fuscus
(Kippis Ruf.)

flavomarginatus?



Balistes flavomarginatus?

Bulistes oculatus, Pan.



Balistes aculeatus

[illegible]

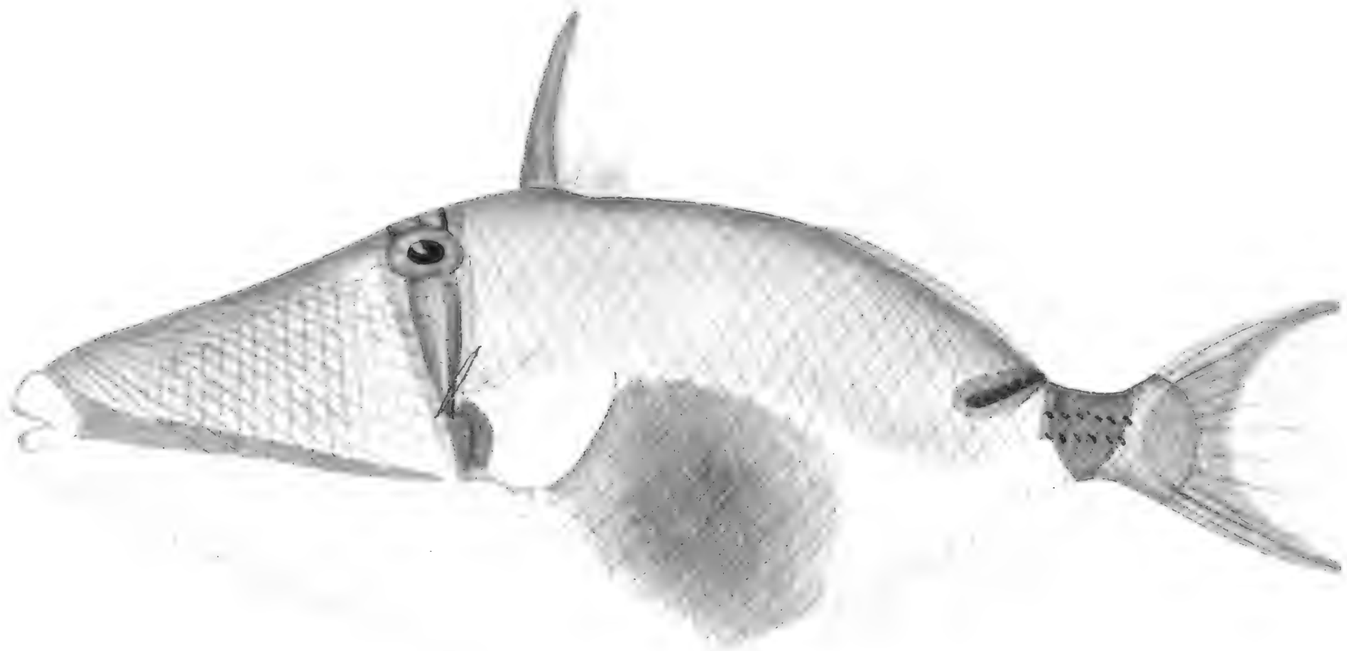
[illegible]; v. 23; f. 13; [illegible] 1.

color of the upper half of the body [illegible] the upper half of the head of a slate color, the lower half of the side is blue & white, iridescent color, in some gallus have extend backward and forward from the middle angle of the mouth to the [illegible]. The lower jaw, the lower jaw, the upper jaw. There are colored lines down from the eye, including the black [illegible] the lines continued over the interocular space. Behind [illegible] large dark black spot over the [illegible] of the head pin is marked by a small [illegible] [illegible] black line [illegible] black spot on caudal back, [illegible] extends to the [illegible] of the caudal chrome yellow, then [illegible] a concentric blackish brown band, outside of which the fin is [illegible] coloring has magenta yellow and black.

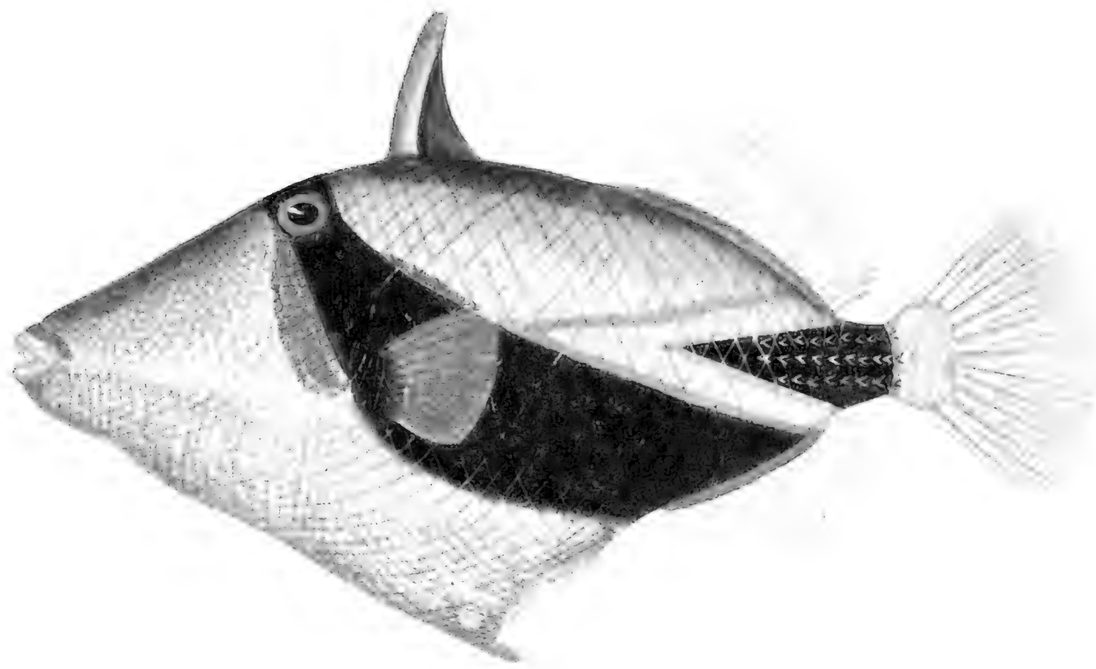
Dorsal fins close from the metatarsal bones to the calcaneum

[illegible] are fed a measuring 3 inches in total length, of which the head comprises a third. In outline, bodyshape and relative proportions of fins are drawing which is very correct except the scale of the compartments which are too large.

Hol. County Cork.

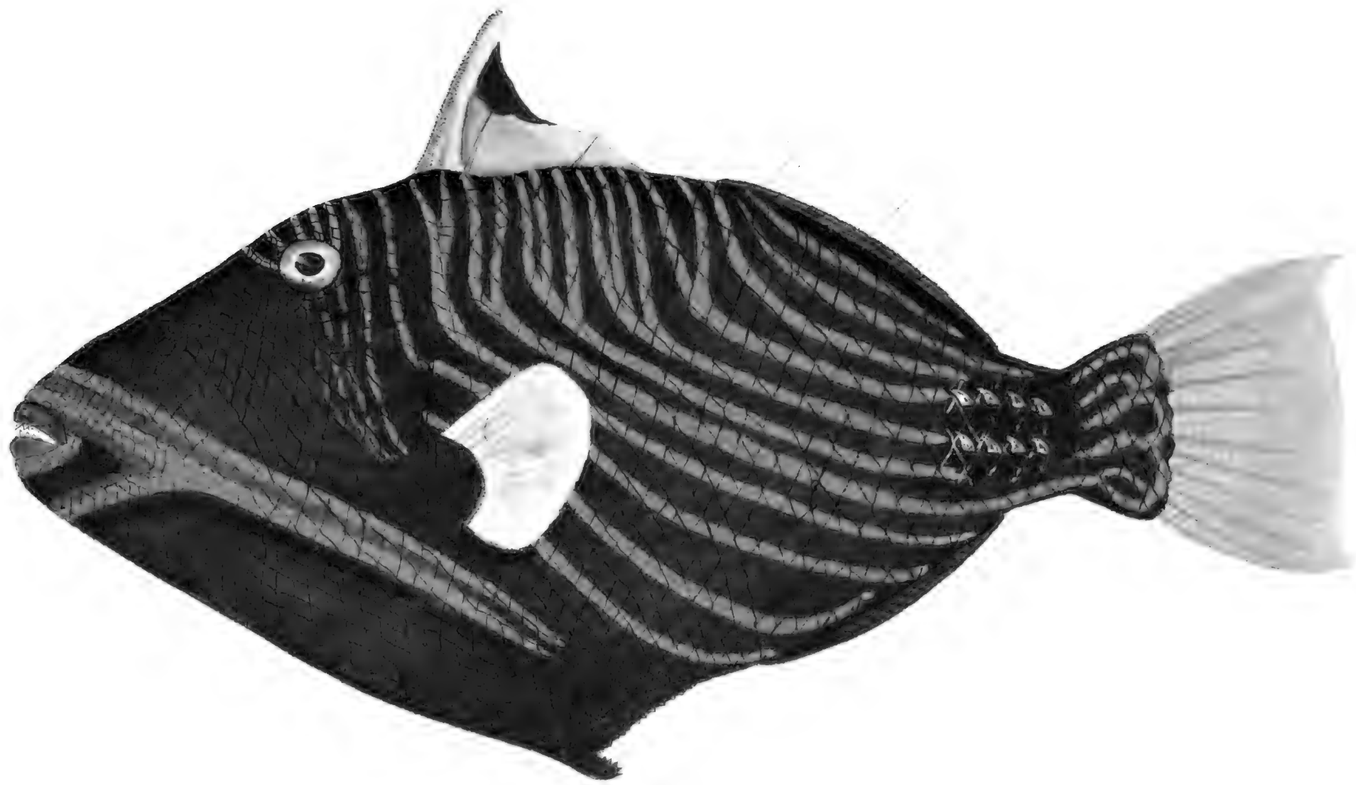


Balistes verrucosus

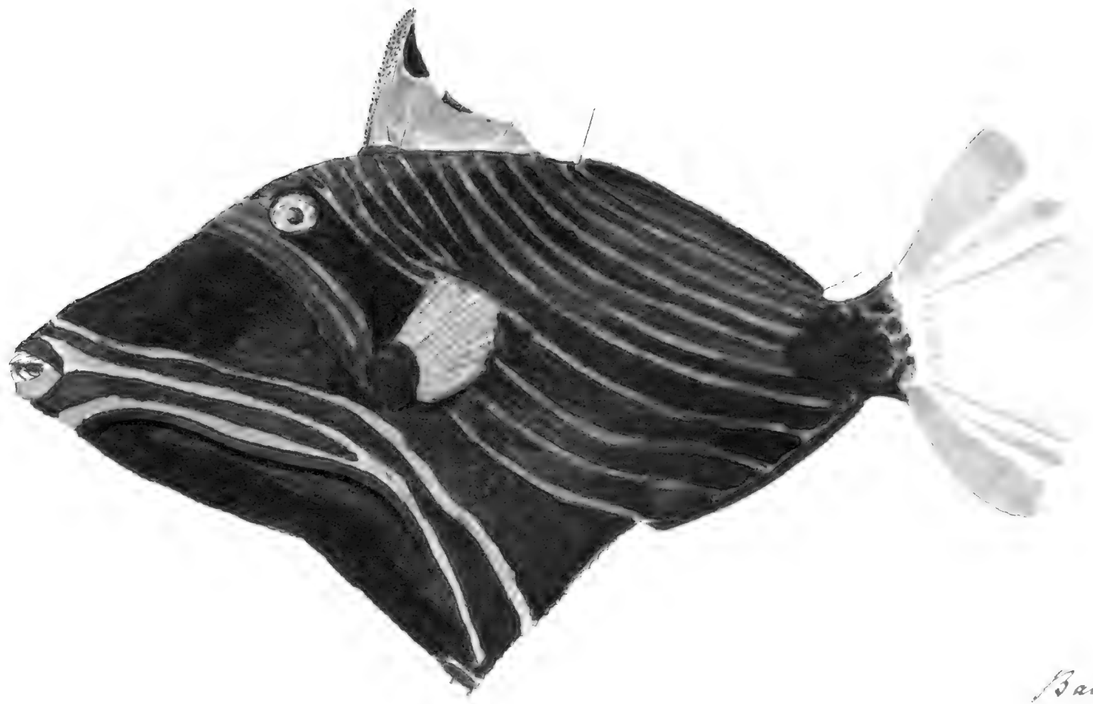


Balistes rectangulus

undulatus



Balistes undulatus



Balistes undulatus

Balistes erythrodon

[illegible]

[illegible] belong to the same [illegible] ingens, or those species characterized by several rows of small spines the upper line of profile from the end of the snout to the dorsal spine, rises at an angle of 30° in a heavy slope, but comes, and the space between the two dorsals has also a slight ascent, and at the commencement of the second fin descends to the tail at an angle of about 30°. From the snout to the end of the pelvic bone the outline is slightly concave, and the base of the anal fin is less prominent than the fin above. The depth of the body at the origin of the first dorsal, equals the base of the latter fin, the head enters about three times in the space between the end of the snout and the hinder termination of the first dorsal fin. The rounded chin is prominent and projects in advance of the small oblique mouth. The upper maxillary teeth are forehead in front and the two canines are very long and projecting outward, the lower maxillary teeth are long [illegible]

[illegible] bicuspidate. The eyes are of moderate size, orbicular in shape, their diameter entering about six times in the length of the head, and four times between their own orbit and the angle of the mouth. The scales are separated by smooth spaces, though under the lens they appear rough. On the body they are rather large, forming regular rhombs, deeper than long, similar but smaller on the cheeks and more or less irregular elsewhere. They are covered with minute granules, and instead of spines we observe eight horizontal rows of little tubercles which are disposed one on the anterior angle of each scale in the eight series, which occupy the space between the soft dorsal and anal fins, four of which are continued on the caudal trunk.

The dorsal ~~fin~~ spine is stout, obtuse, scabrous in front with minute spinulets. Its point of insertion is just behind that of the pectorals and is separated from the soft dorsal by a space equal to half the length of the latter fin. Its posterior membrane is small, and deeply concave. The soft dorsal and anal fins are rather long. The

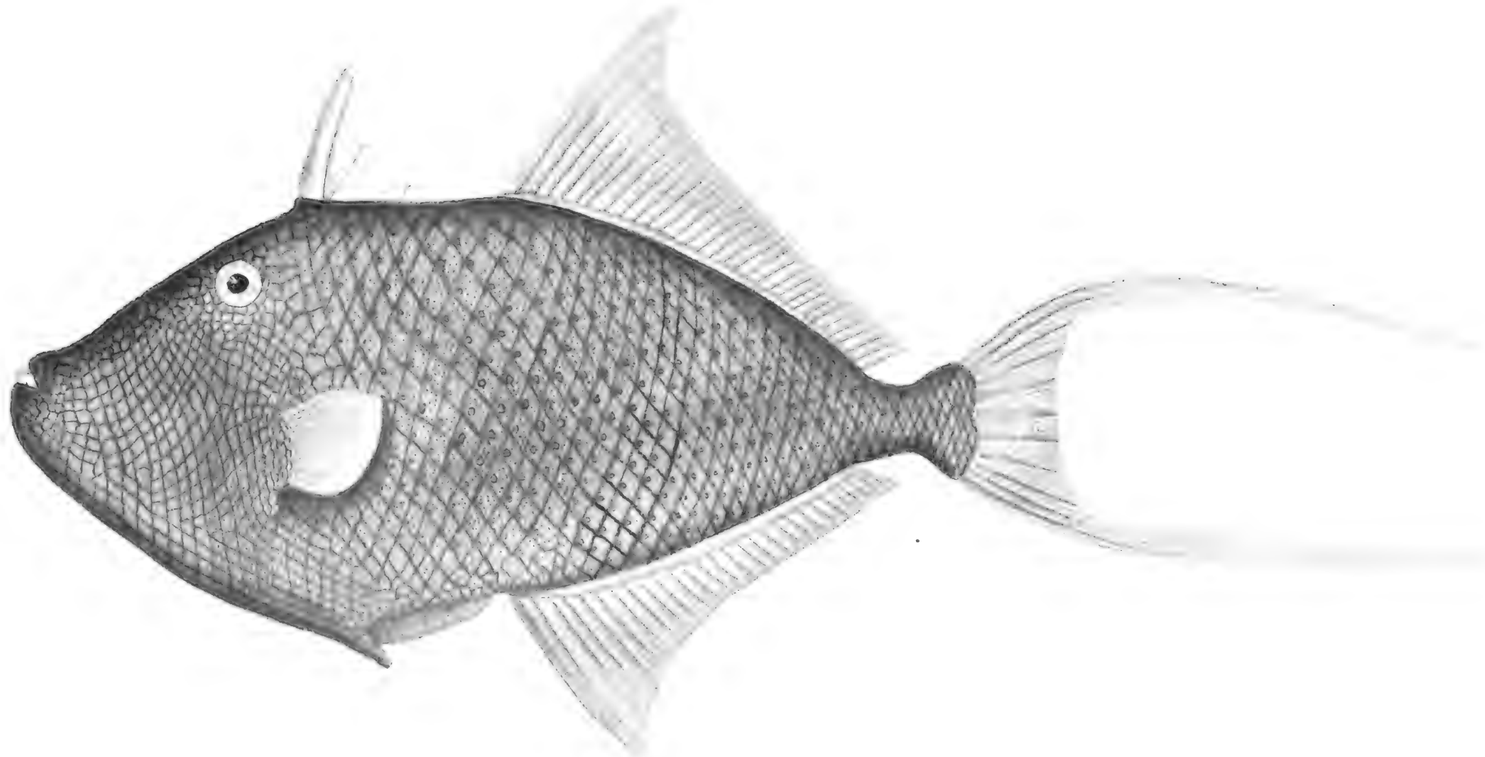
forms the longer and deeper, their anterior portions slightly prolonged and both tapering posteriorly. The pectorals are small, and obliquely truncated. The caudal trunk is small and the upper and lower rays are drawn out into the prolonged tendrils, the lower the longer.

Color of the living fish dark violaceous blue. Head more or less tinged with brownish bronze. Sides light green. Both rubbish and lower first dorsal membranes violet, all the other fins the same color as the body, the caudal with a posterior white border, and the left dorsal and anal with a light green tinge along their basal portions.

Length 12 to 13 inches.

Hab. Society Isls.

A rare species. The dead fish is ~~than~~ nearly black.



Balistes erythrodon

91 291

Monocanthus pardalis ~~[illegible]~~

Plate

D. 1/[illegible]; A. [illegible]; [illegible]; C. [illegible].

This Monocanthus [illegible] small [illegible] the head constitute [illegible] the eye [illegible] the length of the [illegible] depth of [illegible] the spine [illegible] numerous, and the [illegible] spine [illegible] the spines [illegible] convex, the [illegible] spines.

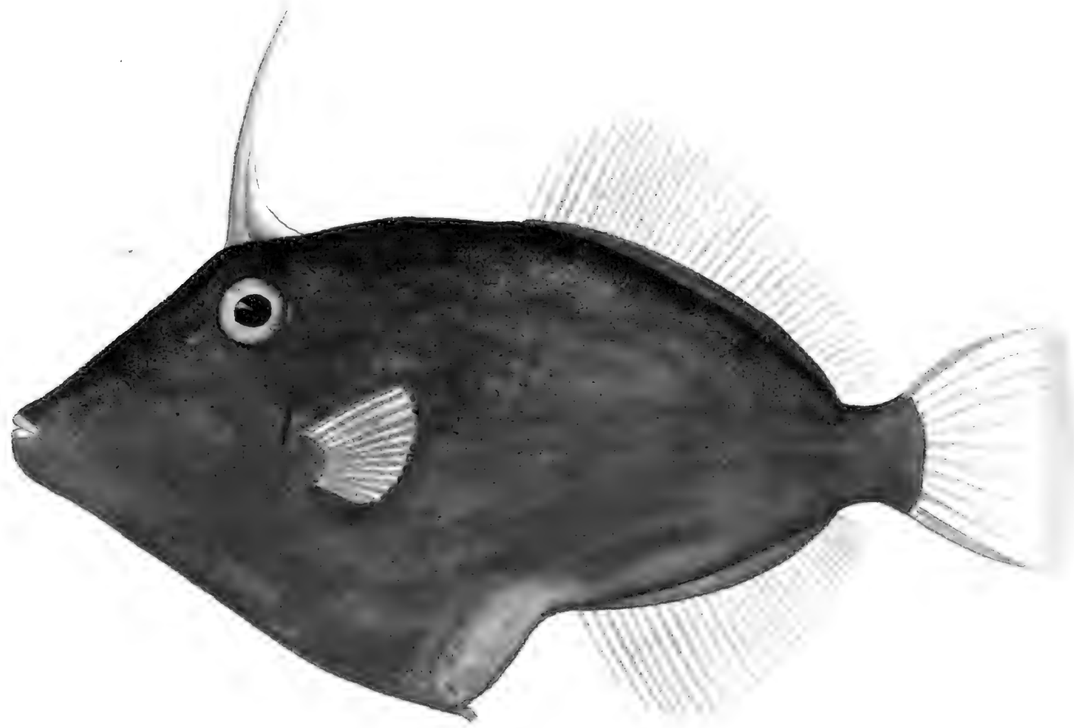
The dorsal [illegible] by the mouth [illegible] the head [illegible] the [illegible] depth [illegible] to the middle of the total length of the fish, [illegible] at the gills [illegible] the [illegible] the caudal [illegible] compared to the entire length [illegible] height.

The ground colour is [illegible] brown with a [illegible] the [illegible] have a slight [illegible] yellow rays. The caudal [illegible] rays are [illegible] brown.

Length, 5 inches.

Habitat — [illegible]

Remarks — [illegible] it is called [illegible] the [illegible] the latter [illegible] dorsal spine [illegible] and the anal 30.



Monacanthus pardalis

Monacanthus pardalis, var.
(Female [illegible])

Allomacrotherus ~~Landtrichenvir~~ [illegible]

Balistes landrichensis [illegible]

[illegible]

It is with a very hesitating [illegible]

refer this species to [illegible] Balistes landrichensis

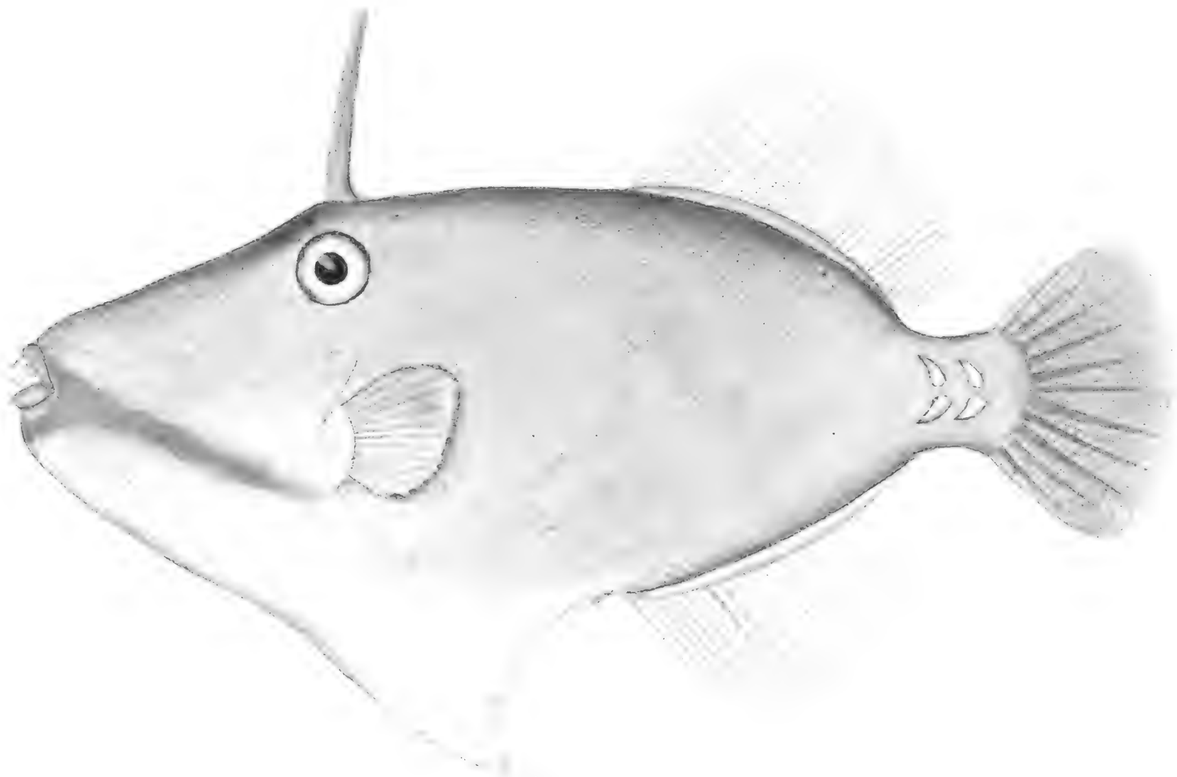
Their description runs as follows. It is so very brief as to be [illegible]

[illegible] formula [illegible]

During several years collecting at the Landrich quarry, I found no other large Allomacrotherus [illegible] upon this is the species indicated by the [illegible]

[illegible]

The specimen from which my drawing was made measured the inches in total length of which the head comprised nearly a third. It represents a profile from the snout to the dorsal spine since the angle of mouth is 300 and is very slightly concave. The pelvic bone is not long and the dentale is proportionately [illegible] of the canal bone is [illegible] rotund conical [illegible] [illegible] beneath the dorsal [illegible] is long and slightly curved. Both [illegible] dorsal and anal are [illegible] only



Monacanthus carolinae

Monacanthus carolinae

Monocanthus [illegible] (Cosmoprion) [illegible] Gth.

Cat.

D. 12/36; A. 29; P. 14; C. 1, 6, 6, 1.

The head constitutes one third of the fish, caudal fin excluded. The snout [illegible] the eye, the chin prominent, and the upper line of profile is slightly concave. The large eye [illegible] its diameter enters [illegible] times in the length of the head. The skin is rough, like the file or velvet. The pelvic bone is spine. The trunk of the tail is [illegible] four strong, which are disposed in a quadrangle and are [illegible].

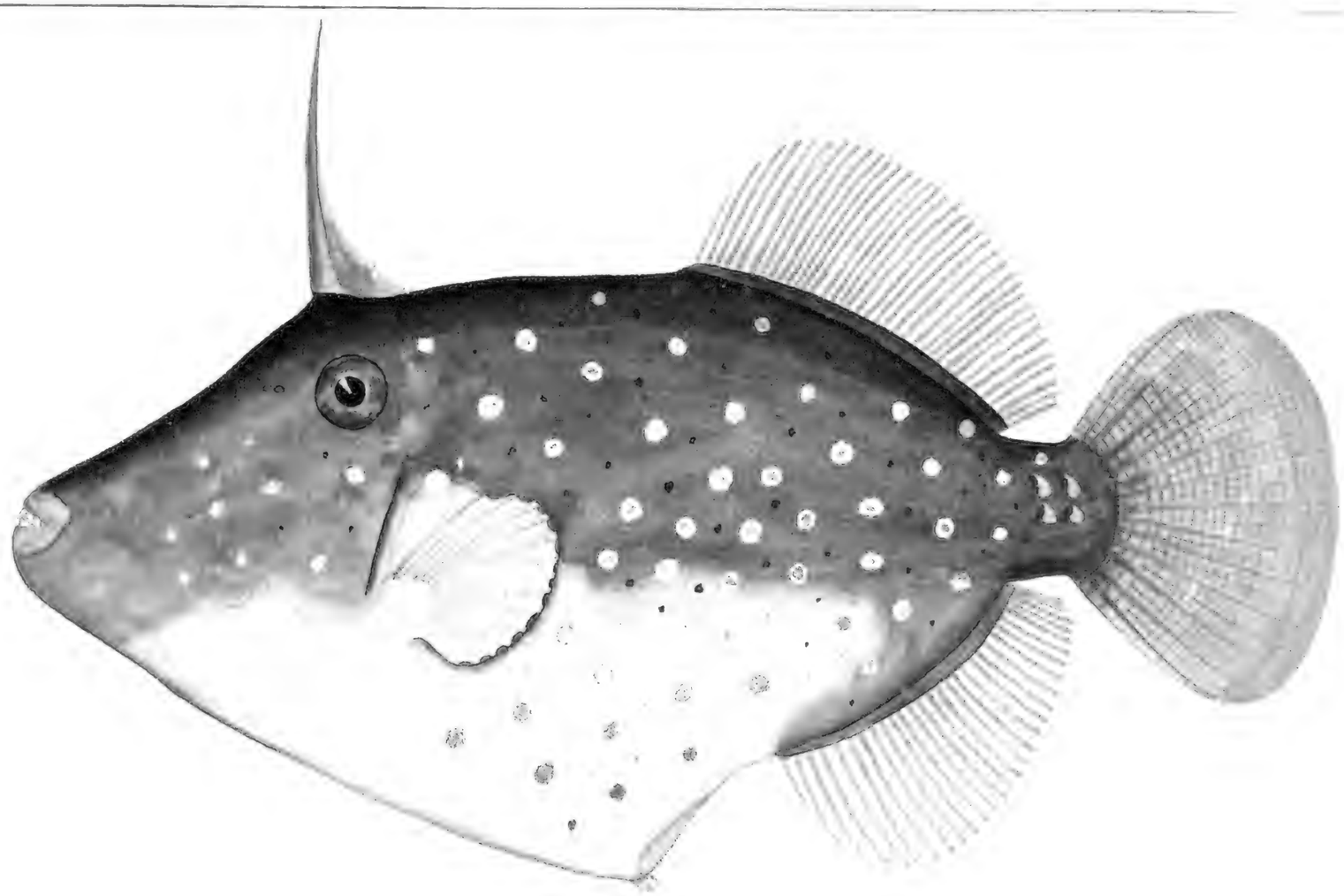
The dorsal spines [illegible], second, and third straight, scaleless in front. [illegible] half spine. The second dorsal [illegible] as long as the head, its upper line arched, and the eighth or ninth ray tallest.

Color somewhat variable, but generally of an olivaceous brown, lighter on the lower parts, or mottled with the same. Some are immaculate, others are sprinkled with small round whitish spots and black dots. [illegible] mixed. [illegible] mottled and clouded with brownish and maculated with small oval pale spots. Sides orange, [illegible] with brown. Dorsal, anal and pectorals have orange rays and colorless membranes. The caudal is olive brown, sometimes mottled with orange. The lateral spines are orange.

Length, 8 to 10 inches.

Habitat.—Society Isls.

Remarks.—The lateral spines are only very developed in the young. The upper [illegible] of the head is more concave than in O. longirostris, Vahl, and the snout more bluntly rounded.



Monacanthus hoserris

Moreover this ~~weather~~ worm-fish

L. 1-27 [illegible]

This remarkable species has a comparatively short head which comprises no more than a fourth of the entire length of the fish, and the upper line of profile is quite straight, and very slightly convex. The eyes are moderately large, equal to their diameter being one-fourth the length of the head, and under the diameter of the snout. Nostrils close together, near the dorsal spine. Mouth small, the gape from its length with the [illegible] the canal. Trunk is very deep, being one-eighth the total length of the fish. The skin is very rough, particularly posteriorly. The medulla of the flanks are vertically undulated on the hind part, in the median line of the body from the middle of the soft dorsal fin is a cluster of steel-colored spines, six or seven in number all attached to a common base.

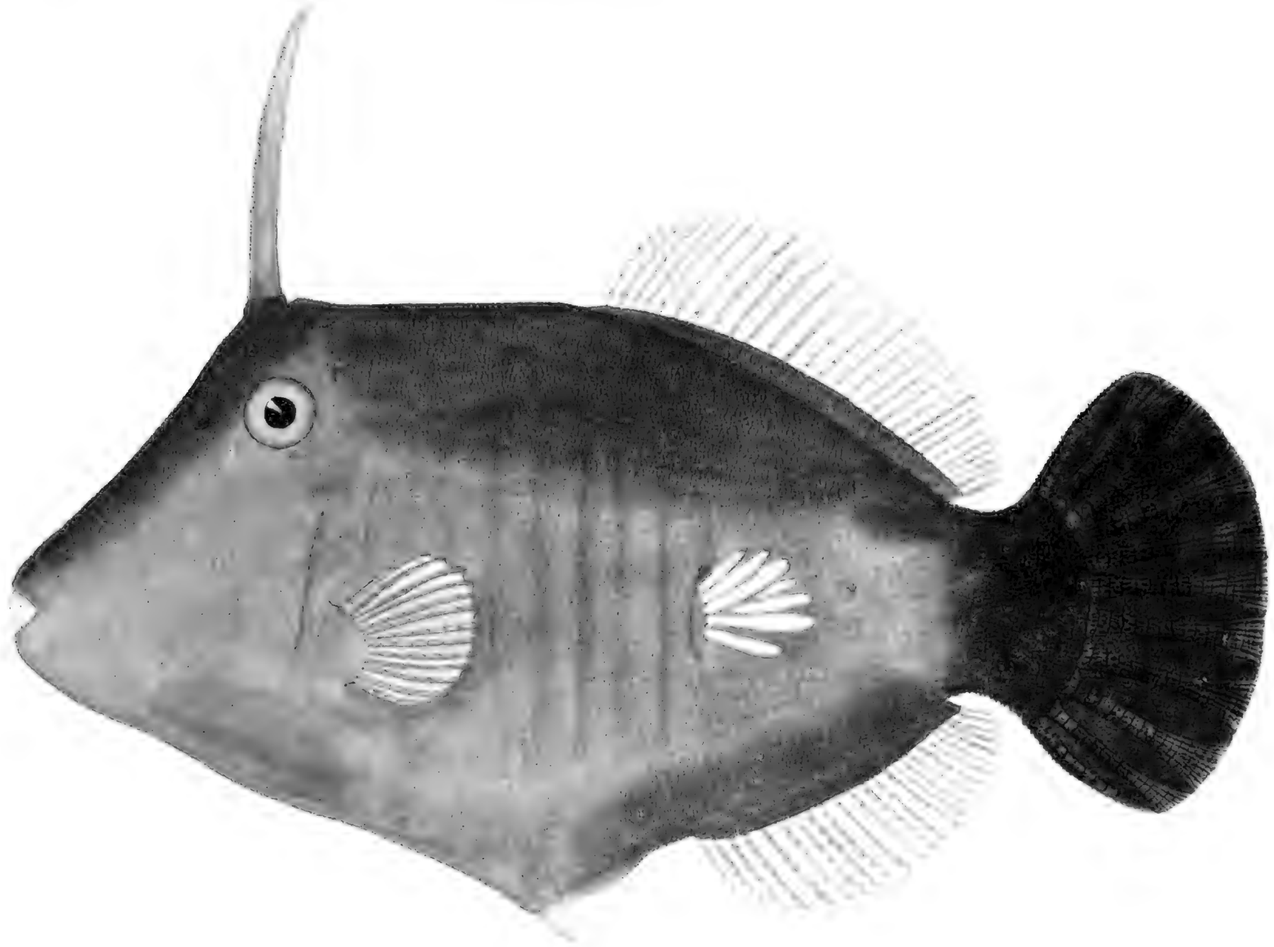
The dorsal spine is stout, long, very slightly curved forward, pointed, and when laid back nearly reaches the second dorsal. Its minute membrane is mostly sunk in the basal groove. The second dorsal and anal are rather long, pointed, and the former extends [illegible] of the [illegible]

Color brownish-olive passing into black along the dorsal region and posteriorly. Under light olivaceous, banded black. All the other fins are nearly colorless, except those which are tinged yellow.

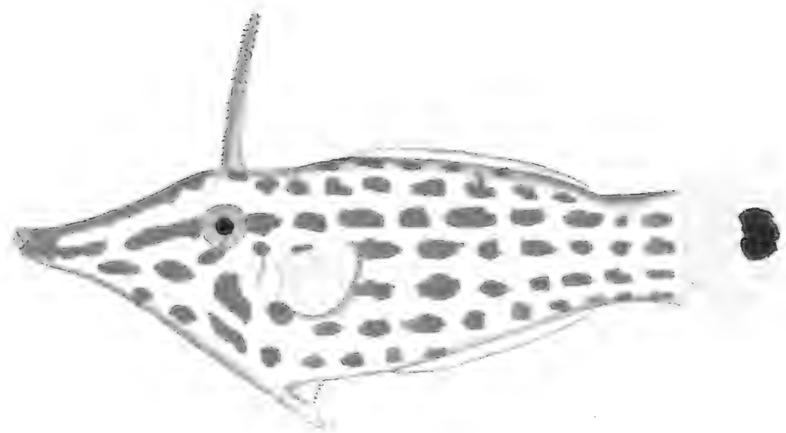
Length 7½ inches.

Hab.—Society Isls.

Among these species of [illegible] seen but a single



Monacanthus ccyrus



Dasyatis centroura ♂

323

Monacanthus spilosoma, Bennett.

Plate

c Monacanthus spilosoma, Bennett, Zool. Ill. [illegible] Fishes, p. 70. [illegible] 122. pl. 1.

D. 1/32; A. 1/33; P. 15, C. 1, 5, 5, 1.

The integuments are covered with short, hair-like asperities, which are the most abundant towards the tail and along the breast. The profile of the head from the snout to the dorsal spine is slightly concave, as is also the space posterior to the spine. The eye is large, [illegible] its diameter equalling one third the length of the head, which latter is, as compared to the entire length of the fish, about two to seven. The prominent pelvic bone is spiny.

The dorsal spine is large, scabrous and armed with a lateral row of recurved spinules. The second dorsal lobe attains its origin at a point corresponding to the middle of the entire length of the fish. The fourth or fifth ray in the lobe. The caudal fin is deep, and the pectorals full expanded present the long circle.

Color yellow, more or less tinged with brown, and the body is closely maculated with small rounded diffuse bluish or brownish spots. The breast and lower line of the head immaculate. The upper portion of the head is more or less brown, and its sides obliquely striped with the same color, but of a deeper shade, of fine wavy blue lines traversing the lower line of the body, from the pelvic bone to the anal base, where its is more or less broken into dots. Sides golden yellow, dotted with brown. The membrane of the dorsal spine is amber color, and spotted with blue. The pectorals are colorless. The soft dorsal and anal are alternately lineated longitudinally with straw yellow and bluish steel. The caudal fin is rich orange red which gradually passes into

range yellow for terminal basal portion, dotted with black and the outer part is marked with a broad black intramarginal band.

Length, 5 inches.

Habitat: Sandwich Isls.

Remarks.—It is from these beautiful little species that about the rocky coasts of the above mentioned islands, are captured in immense quantities with scoop-nets by torch-light. I have seen them floating dead in great masses. They are called by the natives Uwi-wi. Tangles are seen the year round hid from view.

2895

Monocanthus setifer Bennett

J. 1-1-33; d. 32; P. 13; V. 1, 5, 5, 1.

The skin is slightly wrinkled like the file in velvet. The head, excluding the caudal fin is one-third of the whole. The large eye is circular and its diameter enters nearly three times in the length of the side of the head. The upper line of the head is slightly convex. The jugular line is very prominent and radiately striated.

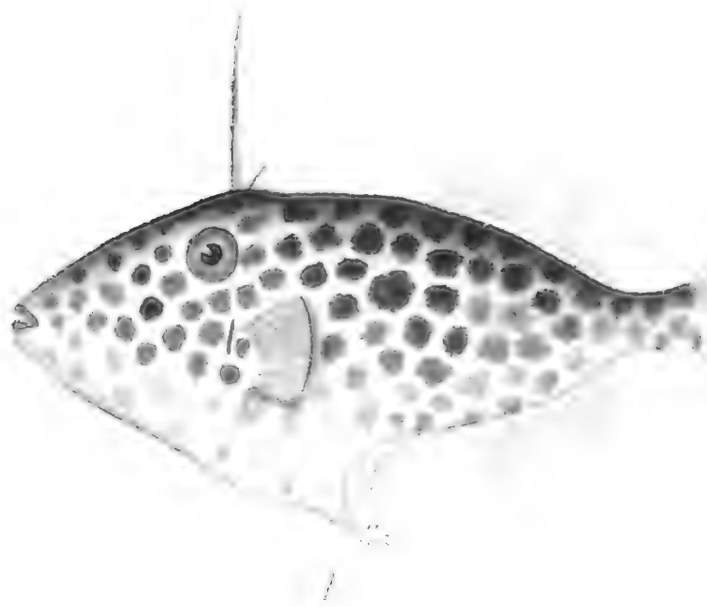
The dorsal spine is long, slender, straight, and placed immediately above the base of the pectorals. It is armed with a lateral row of spines which are curved downward and its anterior surface is scabrous. The length equals the distance from the eye to the end of the snout. The second and anal are rounded off anteriorly, the former commencing at the middle of the back, and attaining its greatest height at the depth of the pectorals. The pectorals are short, their length only equalling the diameter of the eye. The back of the caudal fin is [illegible]

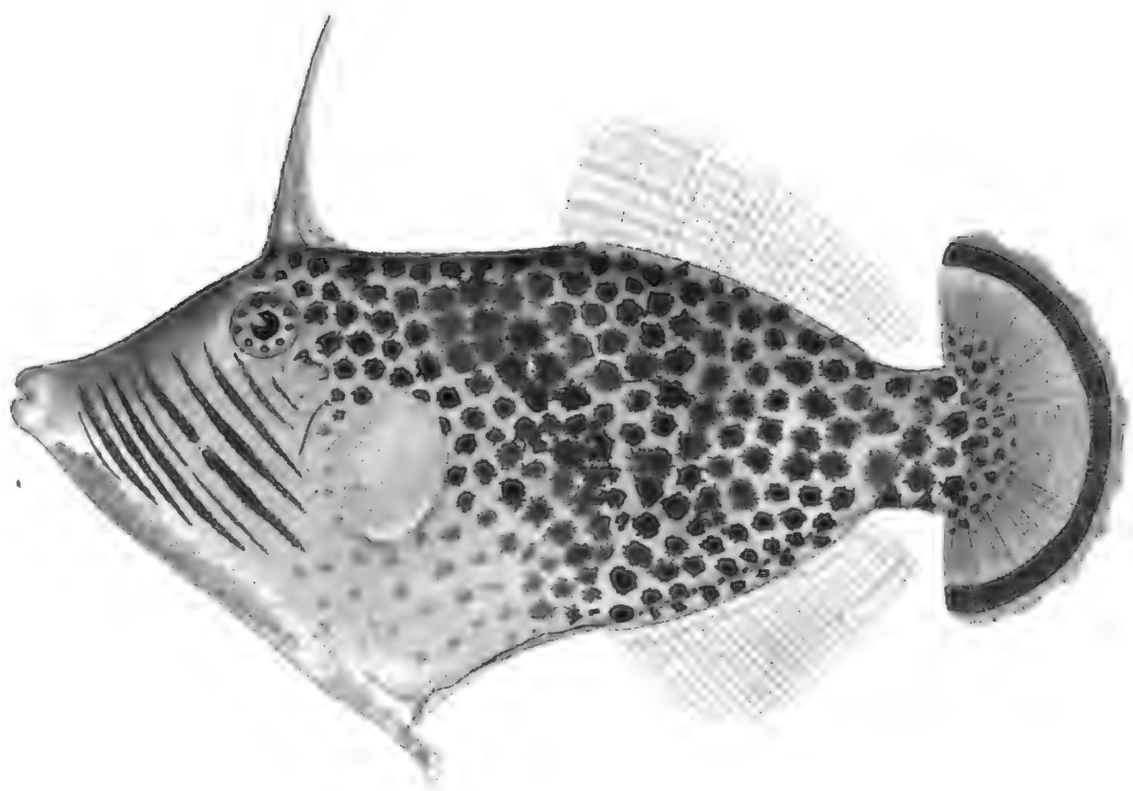
Sides light [illegible] and olivaceous brown above. Everywhere except the fins maculated with olivaceous brown, the spots being irregular shaped and fading away along the lower parts. Sides yellow. Fins nearly colorless.

Length 4 inches.

Hab.—Sandwich Isls.

Monacanthus sp.





Monacanthus opilosoma

Concretus [illegible] 3[illegible]

Mulloides pareva, Lesson.

Mulo

Mulloides pareva, Lesson, Voy. de la Coquille, p. [illegible]
D. 1/9; A. 2/7; C. 17; L. l. 58; L. t. [illegible].

The general outline is elongate, slender, strongly compressed. The skin is entirely. The head, measuring to the gill opening, in a specimen two feet and one inch long, is five and three-fourth inches in length. The snout is considerably produced, and the upper line as far as the inter-orbital space is concave. The eye is nearly circular, its greatest diameter about one-seventh the length of the head, and situated one diameter beneath the single dorsal spine. The latter spine is minute, and separated from the second dorsal by an empty space which nearly equals the second dorsal base. The second dorsal and anal fins are low, nearly equal in height, and the latter which is the longer, also approaches nearer the base of the caudal. The small pectorals are rounded. The caudal fin is very large, being one-fourth of the entire fish, its posterior margin strongly arched and the ray-tips just beyond their membrane.

Color of the living fish light purple-brown, changing when dead to a light greyish-brown. Sides of the body with abbreviated longitudinal lines and crescent shaped spots, violet, and the head is irregularly lineated longitudinally, with the same color. Scattering small brown spots on head and body. Sides silvery yellow; cornea blue black. Fins transparent, nearly colorless, all except the caudal have pale umber rays.

Length, 2½ feet.
Habitat. Society Is.
Vernacular name, Pareva.
Remark. Not common. Lesson obtained his specimen at Tahiti.

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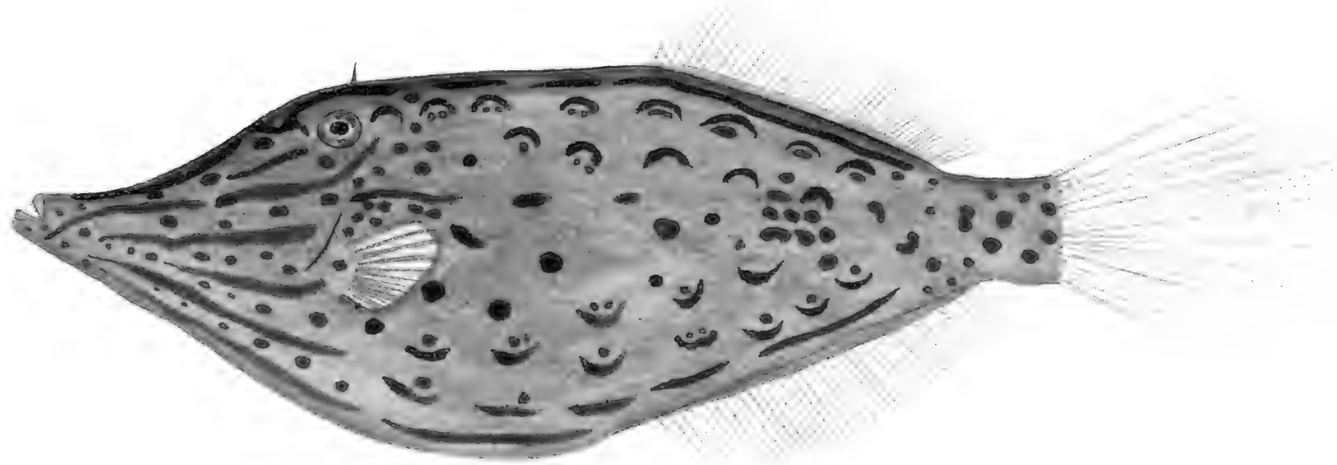


Monacanthus scriptus

cubicus

Estimation of the species

Petrophilus

The body is elongate-ovate when viewed in front, and the back is but very little convex in gently arched in profile. The sides are concave as perceptible, convex in front and the thorax is somewhat laterally compressed, the elytra thick, and the legs which are in a single image are very close flattened and hairy. Intermediate pair unequal.

Color black dull, antennae brown, yellow with dusky tinge and each scaly spots with a pale blue or green and spot. Legs white with olive shades or black with blue spots. The head is broad finely latter with black sides white with brown clay. Elytra pale from yellow

Length 8 to 12 inches

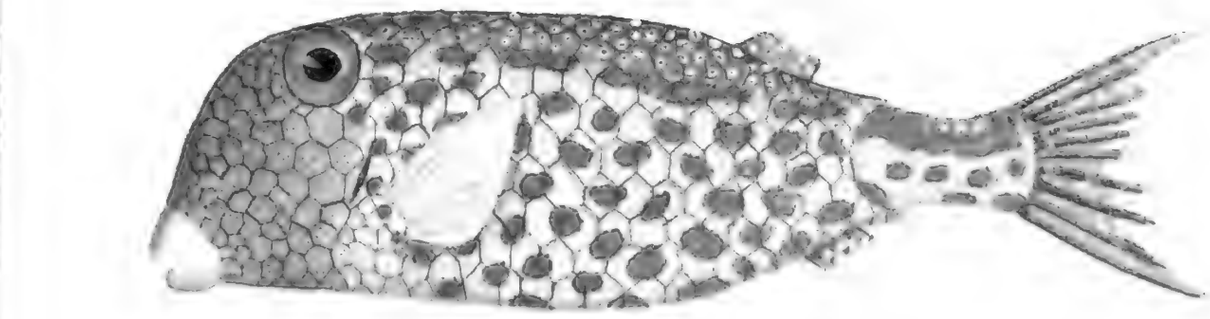
Hab.— Kingmill, Cheltenham.

302

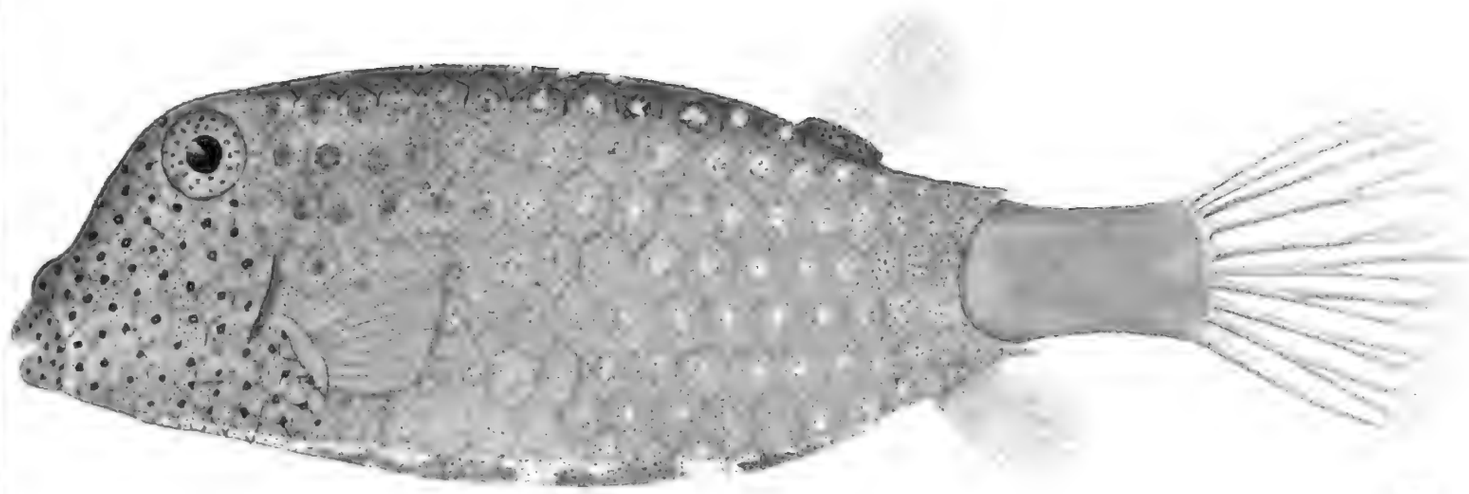
Ostracion punctatus

306 305

305



Ostracion sebæ



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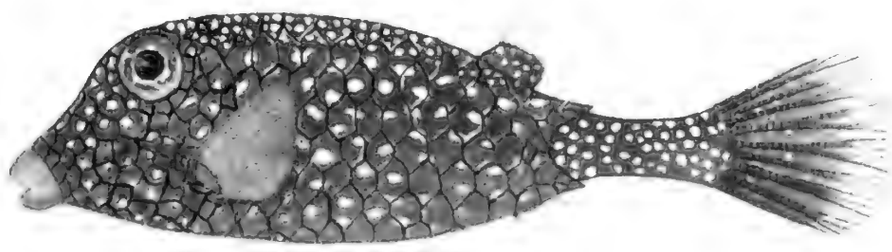
Ostrac. cubicus



Ostracion punctatus

307

1 7

Ostracion obesus (pornaizi)

[illegible]

[illegible] of the mouth [illegible] was that it [illegible] of Cuba, and is the only specimen that has come under my observation.

The natural colors have ~~been~~ probably been destroyed by the alcohol. It is

upper and lateral planes concave, and the lower convex. The superior lateral ridge, which extends from the eye to the trunk of the tail, has two small tubercles anteriorly, and has an elevated crest-like [illegible] posteriorly. Just in advance of the dorsal fin there is a small depressed sharp tubercle. The breadth of the back is one-third less than that of the belly. The eyes are large, nearly [illegible], and have high [illegible]. The head behind them is less than half [illegible] lateral space. From the [illegible] angle of the [illegible] the [illegible] large [illegible] forwards, spines [illegible], tapering, they are [illegible] to a blunt point, and their length is a triple [illegible] the diameter of the eye. Two similar spines [illegible] from the hinder portion [illegible] surface

mix of a nearly uniform brown, much paler with in patches. No stripe along the ventral region. ~~region~~. Fins uncolored.

The form is elongate, subquadrangular, gradually tapering, the dorsal and ventral outlines are slightly arched. The front of the head is vertically convex, ~~and~~ deeper than long, which latter is one third of the length of the fish, measuring from the snout to the end of the tail. The outline of the body when viewed in front is quadrangular, with the upper and lateral planes concave, and the lower convex. The upper lateral ridge, which extends from the eye to the trunk of the body has two small tubercles anteriorly, and is an elevated crest-like tubercle posteriorly. Just in advance of the dorsal fin there is a small depressed tubercle. The breadth of the back is one-third less than that of the belly. The eyes are large, nearly circular, and placed high in the head; their diameter is less than ~~the~~ half that of the interorbital space. From the upper anterior angles of the head, there arises two long spines, directed backwards; they are longitudinally striated, tapering to a blunt point, and their length is a trifle less than the diameter of the eye. Two similar spines arise from the hinder portion of the lower surface

of the body, and are directed backwards reaching as far as the base of the caudal fin. There are eight acute, conical teeth in the lower jaw; there in the upper have the front missing so that their exact number cannot be determined.

The little multangular plates on the back and sides, have raised lines radiating in a stellate manner from their centres, which gives the whole surface a beautiful reticulated appearance. The central plates are studded each with a single central, and a circular range of small hemispherical papillæ.

The dorsal fin is inserted quite near to the cylinder termination of the body. The anterior rays are the tallest, and the upper margin of the fin is convex. All the rays of this and the other fins are unbranched.

The anal fin is quite similar to the dorsal but placed further back.

The pectorals are about the same height as the dorsal fin.

The caudal fin is rounded behind.

Length. 2 1/8 inches.

Habitat. Cuba.

Native name Moi.

Remarks. This is a dwarf, stunted species found at the above locality, from which this differs in several important characters, which it unnecessary to point out.

C. bacca sp. n.

S. 10; A. 9, 6. 2; P. 16.

This minute species may easily be mistaken. It is uniform [illegible] grey. Sides a little greenish. Fins colorless.

Form sub-quadrangular in profile, sides highly convex, back slightly convex and forms with the contiguous conical tubercular plates in pectoral half. The belly is rounded centrally, the angles above and beneath very prominent, leaves with depressed tubercles, which become conical in the posterior region, extending to the membrane by elevated stria. The dorsal [illegible] emarginations in the upper [illegible] angles. Eye large, oval.

Length 1 inch.

Hab. Secret Isle.

Estimation p. 1

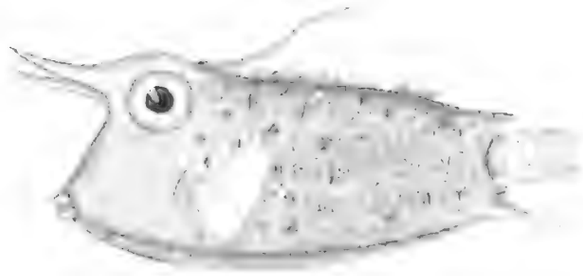
D. 7; A. 7; P. 11; V. 1; C. 1.

This species is yellow on the back and sides, the belly brown yellow, the pectoral fins are tinged with olive, the fins are edged, dotted with violaceous-blue, hidden olive with a golden sheen. The head and trunk maculated with olive spots and dotted with violet blue. All the other fins are olive.

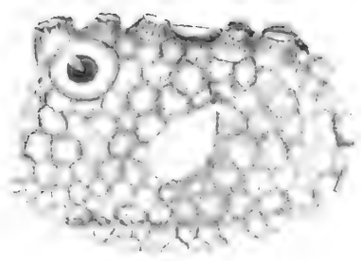
The anterior spines are prominent, rather slender, and nearly straight. The posterior spines are [illegible] same size as the anterior ones, slightly curved, and all [illegible] fully grown. The scales have radiating elevated lines and numerous papillae. A small tubercle [illegible] just upward and backward from the orbit. [illegible] a large hump about midway between the eye and hinder tip of the dorsal fin.

Length See drawing

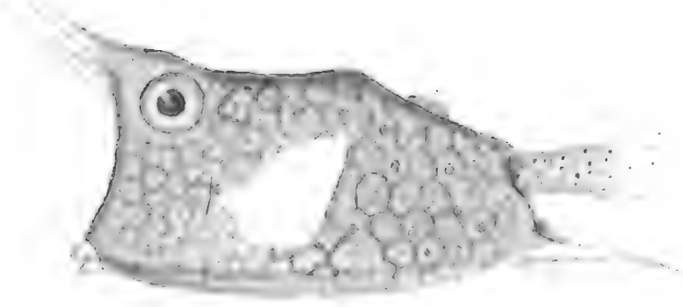
[illegible]



Ostracion pennacinii



Ostracion cornutus



Ostracion cornutus

Ostracion longicaudatus, Lett.

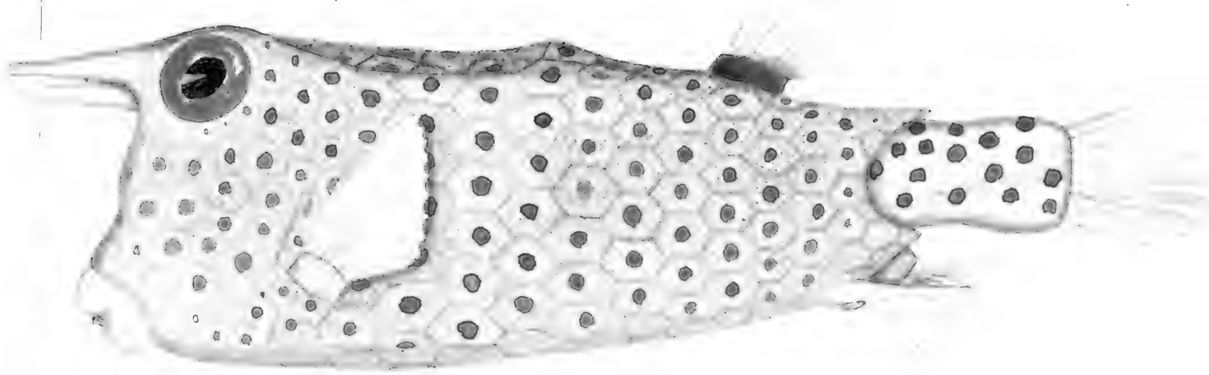
Male

D. 10; A. 10; P. 10; C. 9.

The dorsal series of scutes, with edges even, the median line is small but distinct. The anterior profile of the head is slightly convex between the eyes and the horns. The eye is large, elongated, and. The anterior horns are rather small, straight, and slightly inclined backwards. The caudal fin is very long, it is bifid, and together with its peduncle is little less than half the length of the entire fish.

Under long black specimens of regular form and such scale is completely alike by a small round black line back and small spot. The fish becomes to most a the back. Pale white or dusky olive, with yellowish white. Caudal and fins with the black. Fins colorless with white and yellow. Peduncle, caudal fin, and fins yellow and black. Fish may change little in under spots.

Length, 16 in.
Hab. Cat. depth 90 fm.
Remarks. The length of the caudal, its bifid rays and shape of the anterior horn will distinguish this species from the Pacific cornutus. It also attains a much larger size.



Ostracion cornutus

Ostracion cornutus, Linn.

Male

Ostracion cornutus, Linn., Mus. Ad. Fr. 1. p. 29.
" quinque cornis, Linn., Syst. 1. n. 11.
Pisis cornutus, Bloch. Ichth. tab. 1. pl. 112. fig. 1.
Ostracion quadrangulus, Seba, Mus. tol. 3. p. 61, Pl. 24. fig. 13.
" cornutus, Cuvier, Règne Anim. p. 325. [illegible]
" " Shaw, pl. 109.
" " Richardson, Sp. Nat. Ser. 1846 p. 200.

[illegible]

The anterior profile between the mouth and the horns is deeply concave. The eye is large, circular, its diameter entering about three times in the space between the end of the snout and the gill fissure. The anterior horns, which are longer than the posterior, are well developed, curving slightly upward and backward from the tubercle occupied the space in the middle of the back about midway between the interorbital space and the dorsal fin. The caudal fin is a little more than half of the length of the head and body, and its rays bifurcate twice.

Color of the sides, soiled yellowish brown, and each bony plate generally with a small circular blue darker marginal spot. The interstices of the plates more or less dusky olive, which gives the flanks a reticulated appearance. The upper surface is of a deeper hue than the sides, and similarly spotted. All, uniform lemon yellow. The peduncle is dotted with blue and olivaceous brown. Irides olive brown, becoming golden toward the center. Pectorals colorless. Dorsal and anal drawn pale yellow rays. The caudal is generally marked with a few large diffuse obsolete, bluish white and dusky green spots.

Ostracion cornutus

Hypselogerion

? Tetracodon No 245

[illegible]

[illegible] is nearly straight from the eyes to the dorsal fin. The skin is [illegible] body, have a slender appearance, [illegible] gradually tapering from the base of the head to the tail. The lower jaw is considerable longer than the upper, [illegible] the gill openings, which are very low so that the power of inflation must be completely small. The spine are [illegible] each springing from the scales, and not by any means so closely set as in the true Tetrodons. The pectoral fins are small of the total length, caudal excluded. The upper portion is rather yellow over the [illegible] but the lower, hanging to the end in shape, approximately in the upper line of profile, and to the front their own length from the end of the jaw. The [illegible] of the [illegible] space, which is transversely concave, [illegible] the distance from the orbit to the angle of the mouth. The [illegible] furnished with a small flap, but no flap. The chin is [illegible] and the upper line of profile from the end of the upper jaw to the [illegible] space is nearly straight with a gentle ascent.

The [illegible] space between the dorsal fin and the [illegible]

[illegible] the primer fin
[illegible] appears necessarily the
[illegible] of the pectoral. The anal fin
[illegible] the dorsal but smaller
approaches nearer to the tail. The
[illegible] left have their anterior
portions prolonged into thin extremes
[illegible] obliquely concave.
Respecting the size, large, their
upper lobe [illegible] concave, the
caudal peduncle and the lower part
convex. The caudal [illegible] even,
but the expanded exhibits a convex
[illegible]

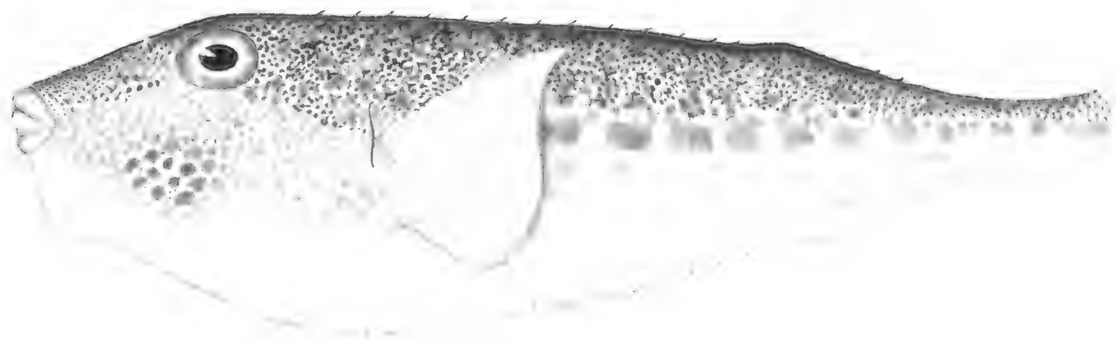
[illegible] the upper parts blush
[illegible] with glossy deep purple
[illegible] which are so disposed
[illegible] on the sides of the ground
[illegible] the middle third of the fish
[illegible] which beneath
[illegible] the flanks become larger
and paler [illegible] and spread over the
[illegible] beneath. Several rows
of [illegible] spots occupies the space
between the pectoral fins and the
base of the tail, [illegible] silvery, clouded
with [illegible] all the fins are colorless
except the caudal which has
[illegible] yellow rays.

Length 3 inches.

Hab. Sandwich Isl.

[illegible]

470.



Tetrodon hypselogenion

stellatus

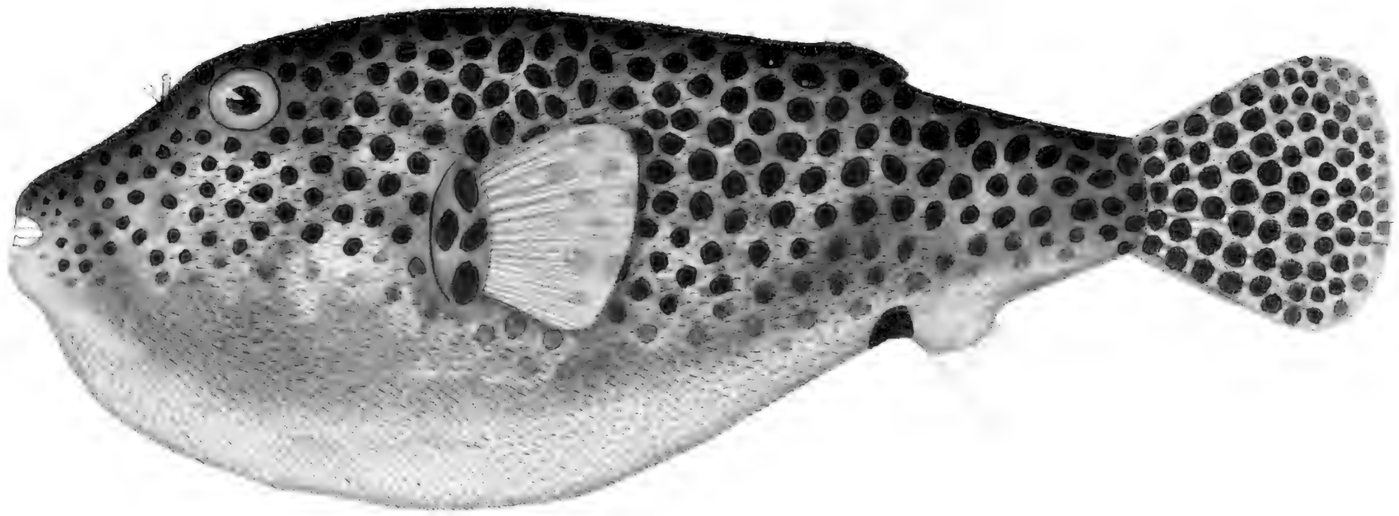
Tetraodon spinosus,

D. 11; A. 11; P. 17; C. 17 = 21.

This species has a short thick muzzle which exhibits a slight cavity on its upper side. The lips are slightly granulate. The head comprises nearly a third of the total length and is nearly as broad as long. The space between the eyes is broad and concave. Back gently arched. The fins are rather small, and rounded at their corners.

Color of the living fish olive green, becoming paler beneath, and closely maculated with minute black spots which disappear beneath leaving the belly immaculate. Sometimes the under parts are greenish yellow, and there have been specimens observed strongly striped with black. Some have a large black spot in front of the anal fin. Irides dark copper-yellow, cornea greenish-black. Caudal paler than the body and more profusely spotted. All the other fins are nearly colorless.

Length 9 inches.
Hab. [illegible]
Native name Tuc-hue Pua o.



Tetrodon stellatus
(Gestellsprafte Kug.)

Tetraodon macrolepidotus

Q. 10, d. 11, P. 17, L. 4, 7.

The Tetraodon can be distended so as to assume a nearly globular form. The segments are very flat, that is, filled with water, the abdomen hangs like a sack as represented in the figure. The spines are minute, closely set and cast, lying under the skin, so that the skin is tessellated with the fine, small plates. The mouth is very small, its upper jaw not extending beyond the eyes. The space between the eyes contains two and a half of the greatest diameter of the eyes, and is rendered concave by the orbits rising above the line of the face. The eyes are small in shape, their length is one-fifth that of the head, which latter equals one-third of the total length, and its breadth at its base is as compared to its length as three to four. The back is gently arched, and the caudal trunk is short and rapidly tapers as seen in profile. The caudal fins are small, and rendered convex by expanding, comprises two-ninth of the total length of the fish. All the other fins have their rays divided off.

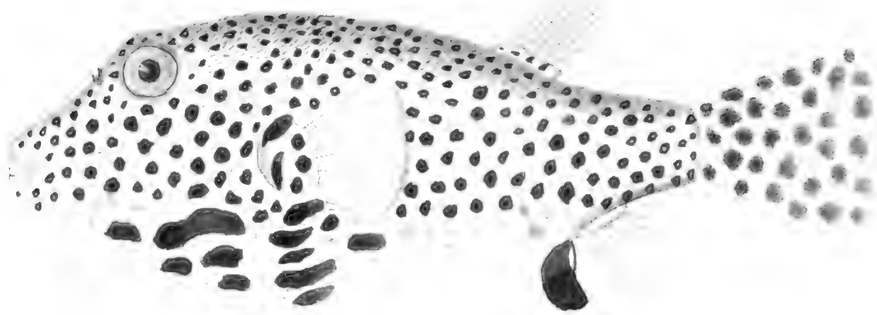
When alive the specimen of a bluish-grey above and white beneath. The upper parts and flanks are also marbled with small irregular black-ish-brown spots, which are smaller and more irregular on the back and upper

a few dark black oblong spots marks the lower anterior half of the fish, and a large one just in advance of the angle of the D.F., three small spots very far in advance of the dorsal fin. The inside of the mouth is tinged with black. Sides exposed yellow, tended colour somewhat like the body, but profusely marked with larger and more irregular shaped spots. All the other fins are nearly colourless.

Length 5¼ inches.

Hab. Loreto, Mex.

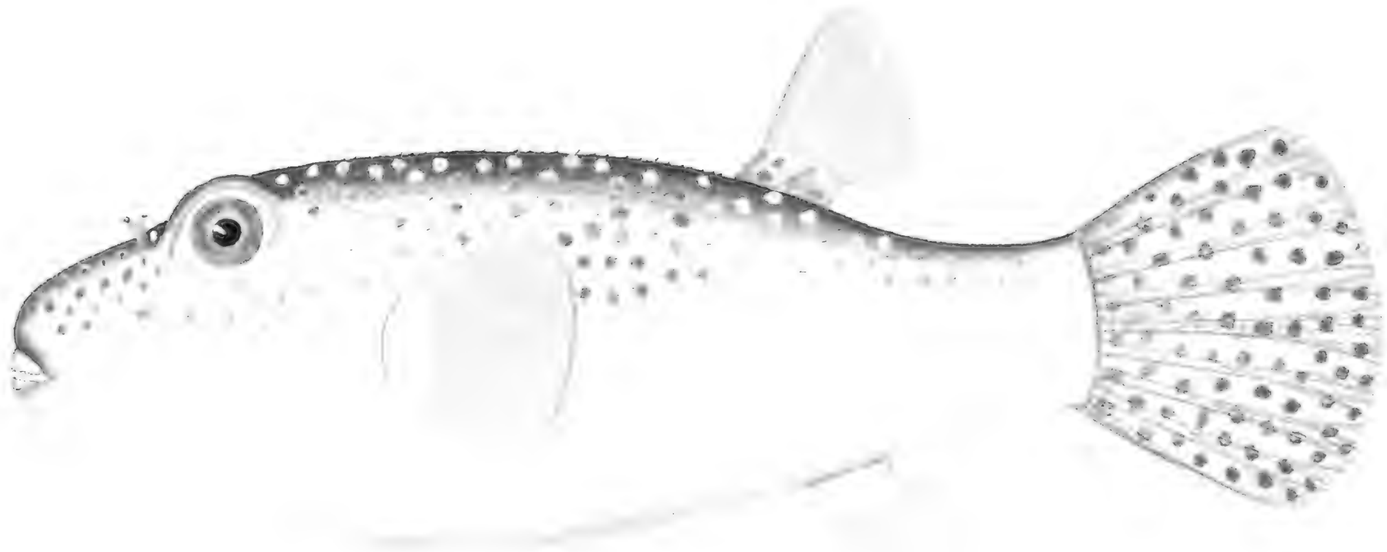
This is a single specimen that



Tetrodon stellatus
(Kugelfischchen Taf.)
Taf.

396

hispidus, var. α



Tetrodon hispidus, var. S.
(Fanning Island)
Taf. Fig. A.

hispidus var. ?

Tetraodon No. 2[illegible]

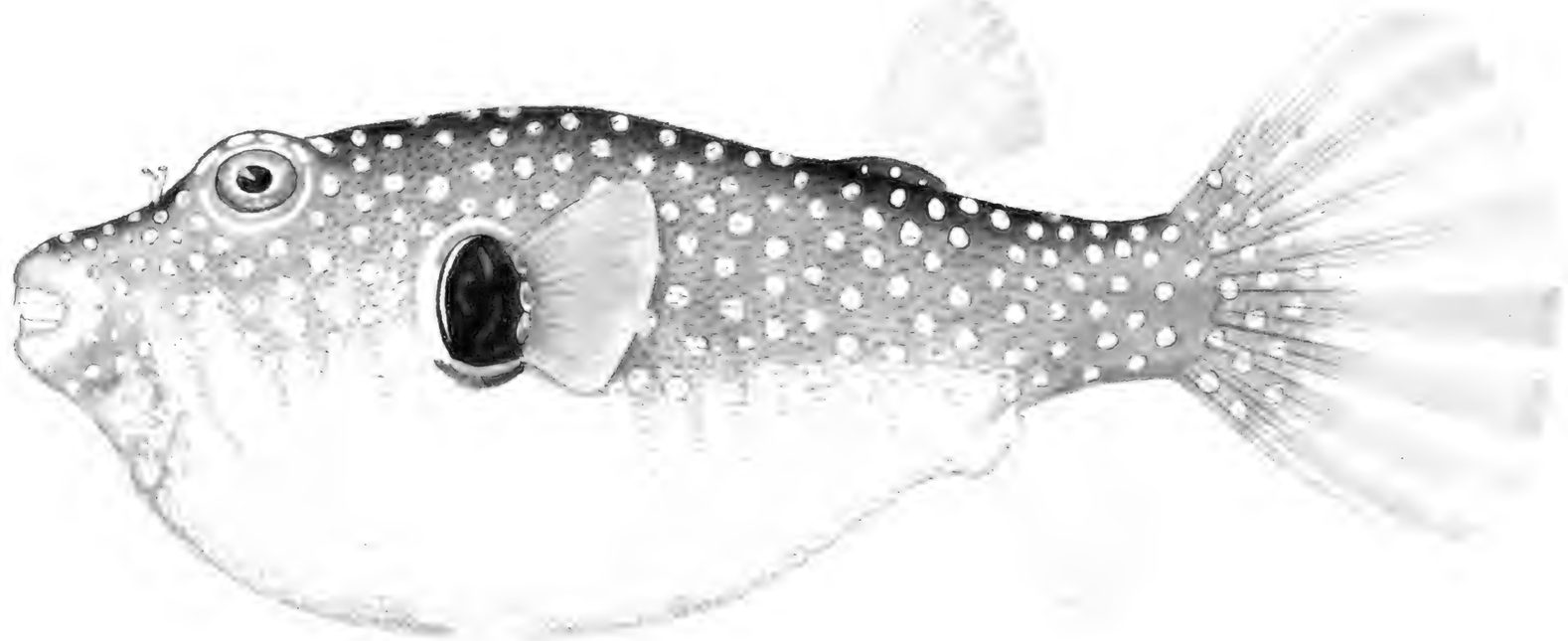
D. 10; A. 10; P. 16; C. 1, 9, 1.

This species is closely allied, if not identical with the one figured in N. S., fig. 244, [illegible] of the [illegible]. Richardson refers it with a doubt to the T. hispidus, Lacép, but not of Bloch, which he remarks is deficient in the dorsal spots. Even should this prove to be Richardson's hispidus, it cannot be identical with the hispidus of old Authors, which latter is a Mediterranean species.

A specimen of our species now before me measuring [illegible] inches in length. Has the dorsal region [illegible] and the teguments are very lax. The head comprising about a [illegible] of the fish, caudal excluded. The spines are long, blunt and largest on the belly. The muzzle is short, slightly [illegible] above and the lips are thick and [illegible] plates. The interorbital space is concave, equal in diameter to twice the length of the orbit, which latter is [illegible] above the general line of profile.

The caudal is very [illegible] and together with all the other fins [illegible]. Their [illegible].

Color grayish-fulvous, passing into white beneath, the former [illegible] color closely maculated with small white spots, which are surrounded by dark rings, and [illegible] in oblique curves [illegible] the white ground beneath. [illegible]



Tetrodon hispidus var. γ.
(Gymnophagus Dis.)
Tab.

hispidus var β

Islands ~~[illegible]~~

[illegible]

An elongate species of the genus now before me measuring nearly 5 inches long, has the shaved or bristly condition of body which many females in candace by comparison have in degree. The head is short and compressed about two-sevenths of the total length. The upper line is less than one-third of the anterior line of the head to the interocular space is slightly convex, the thickness at the base of the horns is a little less than its length. The horns are curved in shape, their length extending from behind on the side of the head to the line of the eyes so that the space between them is perceptibly concave. The snout is obtuse, and its lips are thick and granulose. The lips are fringed and capitate [illegible]

The color of a [illegible] specimen is greyish on the upper parts, passing into white beneath, and the tip of the snout is brown. Head, body and hind legs of the caudal fin mottled with small round blotches of a darker shade, which are larger and more [illegible] on the back, [illegible] on the head and quite small on the caudal fin. The upper part of the body is marked by several dark, [illegible] blotches, brown and white [illegible] the region of the orbits and [illegible]

Tarsus and forward from the pectorals many [illegible] have oblique yellowish olive stripes and a few oblique buff yellow ones marks the middle of the flanks, all directed downward and backward. Sides yellow with an inner brown band and margined with orange. The caudal is rather paler than the back, but becoming quite dark along its hinder margin. Pectoral hals under yellow. Dorsal dusky. Anal paler.

Length 9 inches.

Habitat. Society Isl.

Tetrodon hispidus, var. β
(Fr. Müller's Aufz.)
Taf. Fig. 13

Tetrodon ~~[illegible]~~ regani

Dipr. Dipr. [illegible]

This remarkable species is probably the largest in habiting the south seas and attains a length of nearly 3 feet. The lateral spines are very small, scarcely projecting beyond the skin, and very numerous in the fully grown specimen, the lateral line may be seen running on each side over the pectoral fin and continued behind the dorsal fin to the tail where it divides into two branches, one passes over the shoulder and unites with the opposite branch, the other curves downward and backward on the cheek, where it thus represents and forms a similar one on the opposite side of the head.

The head constitutes a third of the fish, caudal excluded, and exhibits a depression on the snout, therefore the outline is a reversed modification of the regular curvature of the back. The lower line of the head is much more full than above. The snout is obtuse, the lips bulky and grange loose. The eyes are situated beneath and not even with the upper line of head, and the space between them is [illegible] convex. The dorsal region is broad and flattened. The greatest thickness being one fourth of the total length, caudal excluded.

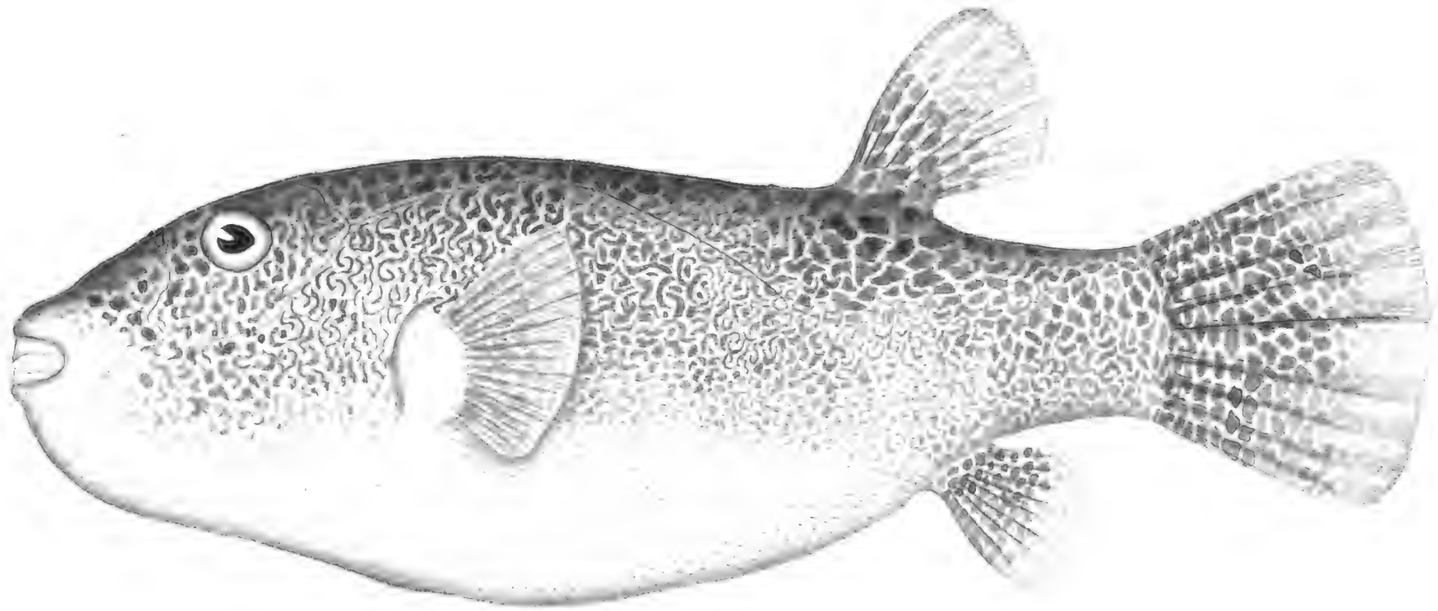
Color uniform light brown [illegible] everywhere except the belly, covered and crowded with blue small spots, irregular

short curved lines and larger angular spots on the dorsal region, which form only linear spaces of the ground color, bright golden yellow, shaded off with slate blue.

Length 2 feet 4 inches.

Hab. Mexico & Cuba.

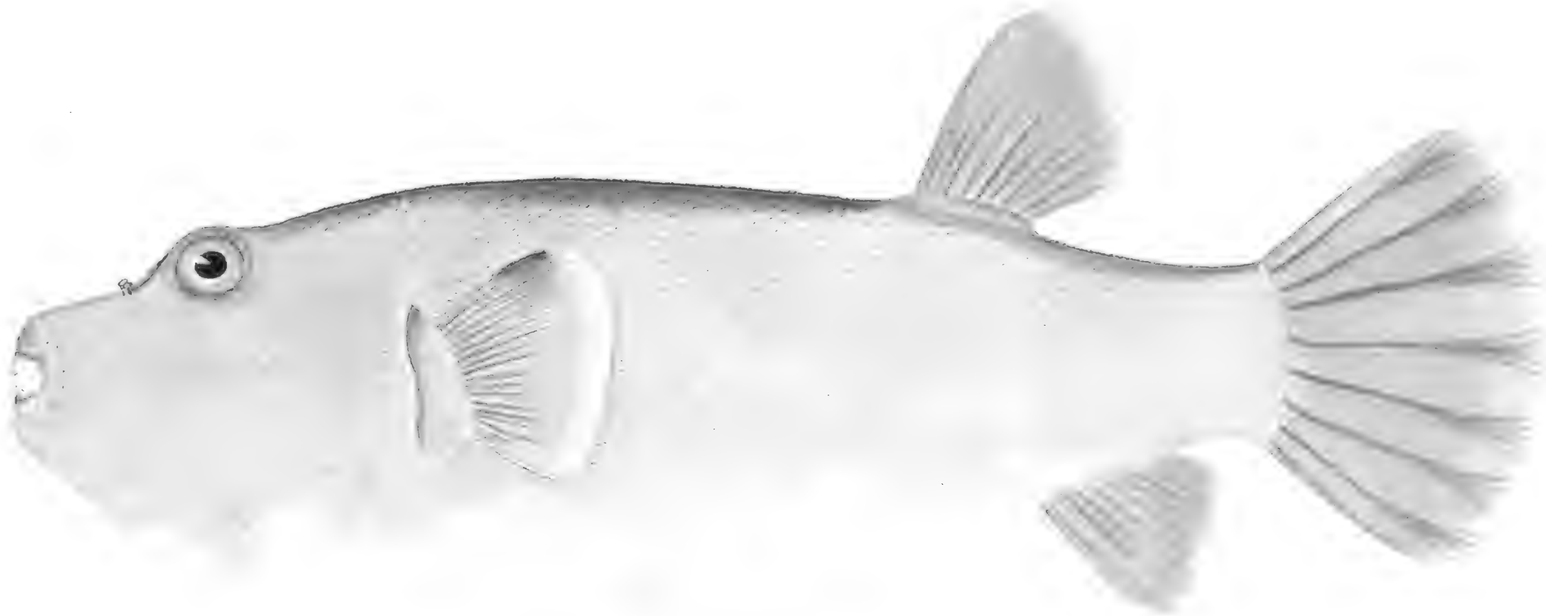
I do not know of specimens of this species we have seen but the single example from Texas.



Tetrodon regani
(Pfeffer/Pappe-Dad.)
Taf. 175

rigropunctatus var. citrinella

Intracellen citrinus, —



Tetrodon nigropunctatus var. citrinella
(Spilopleura Dup.)

No. 200

meleagris

Tetracion meleagris, sp. n.

Tetracion meleagris Stimpson, MS.

= [illegible]

= [illegible]

Hypophysis [illegible], Dickerson, p. 17.

Hypophysis [illegible], Dickerson, p. 17.

This is probably the Tetracion meleagris, Stimpson, of the museum, but it is a short thick-tailed form of Phrynosoma, which was obtained at the Gunnison Lake. I have also collected it at that group.

In this species the interscapulars hang very loose, more so than any species with which I am acquainted. The head constitutes one-third of the total length, caudal fin extended. The scales are slightly keeled, and there is a depression in the middle of the interscapular space, where the upper line of profile and their interspace is concave. The caudal is angulate.

Color, brown, blackish brown above and over, where most dark, with small pale or whitish spots, which are larger and more numerous on the back; beneath smaller and sparse, above, filled, blackish, yellow, with an outer [illegible] the same color as the polygonal spots, maculate, with similar [illegible] spots. The dorsal and [illegible]

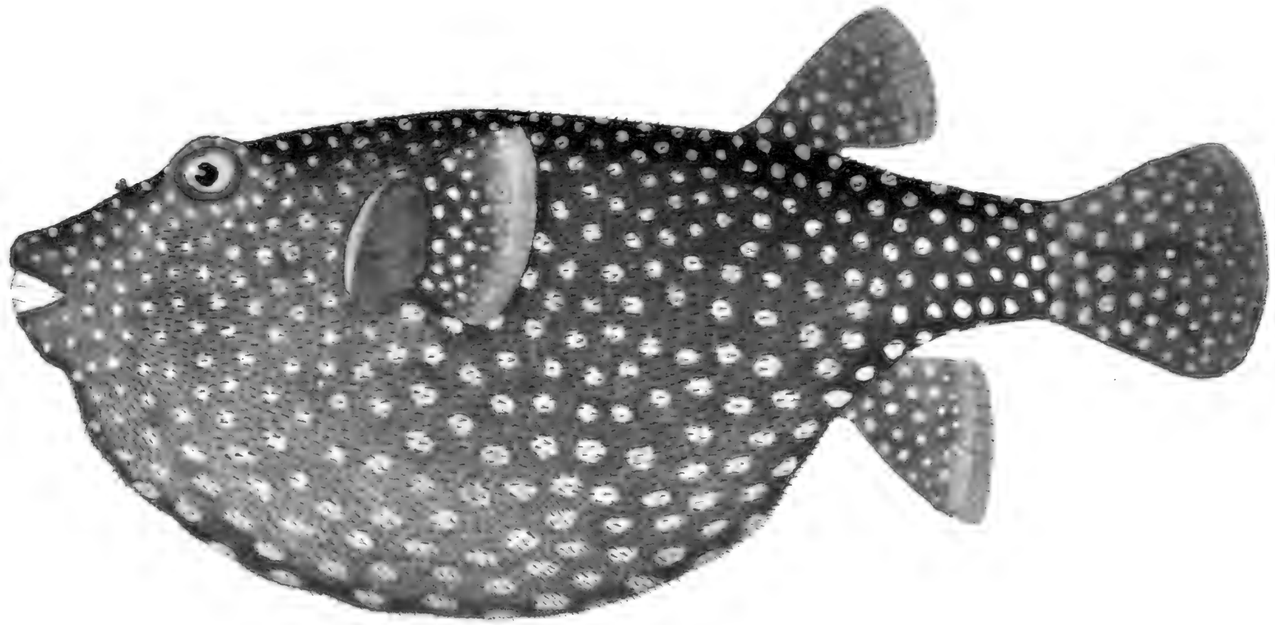
[illegible]

[illegible] is in [illegible]

[illegible] (by [illegible] Linnaeus, [illegible])

[illegible] not the [illegible]

[illegible]



Tetraodon melanogrio
(Bigeye illustr.)
Tab.

solandri

Introduction to [illegible]

Dig. A. 8, 11; C. 1, 7, 8.

The upper and lower outlines are gently arched, and the snout is rather long and convex above. The greatest depth is nearly half the total length of the body. The head comprises a third of the fork, and is slightly shorter than the distance between the eyes. The eyes are circular, their diameter entering four times in the length of the head. The trunk of the tail is slender, and the caudal fin is large, and its lobes of equal size, narrowly rounded behind. The dorsal and anal are rounded, and the pectorals are broad and tapering ~~[illegible]~~ beneath.

Color [illegible], brown or brownish above on the sides, and fading into lemon yellow on the belly and light copper-red beneath the throat. Large transverse bars of dark on the upper parts. The head and the caudal trunk marked with black, and dark more or less [illegible] green dots and small spots which are mostly round. There are the back are larger and more remote than those on the flanks. Back of the eye and along the lower parts they are more [illegible]. On the latter portion of the fish they are inclined to assume the form of series. On the head and caudal trunk they are very small, while those on

The two lines of scales are the largest and show a similar colored lines on each side of the middle and below the lower margin of the orbit. The belly beneath is tinged with blue black margined horizontal lines. A blue line marks the base of the dorsal and anal fins. Sides with an orange or vermilion red, a deep green and an inner golden yellow or sea green. The dorsal and anal and pectorals colorless, with their tips edged with black. The caudal is the same color and dotted like the flanks, becoming vermilion red posteriorly, where the dots assume vertical interrupted lines.

Length 4 inches

Hab. Lewisville, Ills.

Probably D. pleurotaenia, Lod. & Nod.

on the middle of the back more dark-
ish and blackish but disappear be-
fore reaching the anal fin. Sides
yellow. All the fins light straw yellow.

Length 5 inches.

Mr. R. Kingsmill Esq.

sp.? s. pullus?

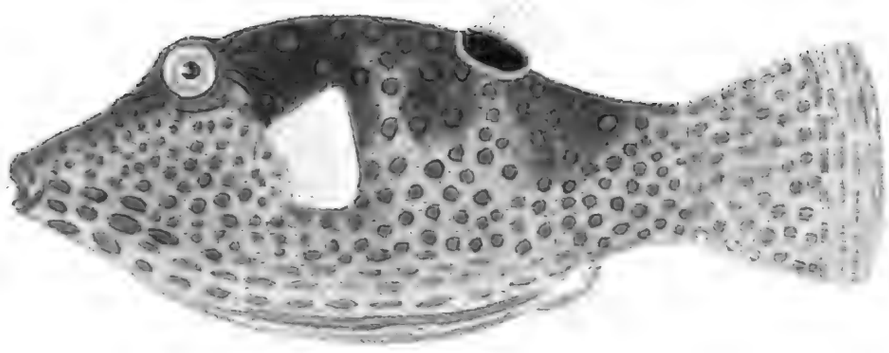
Extract No. 1

Description of specimen

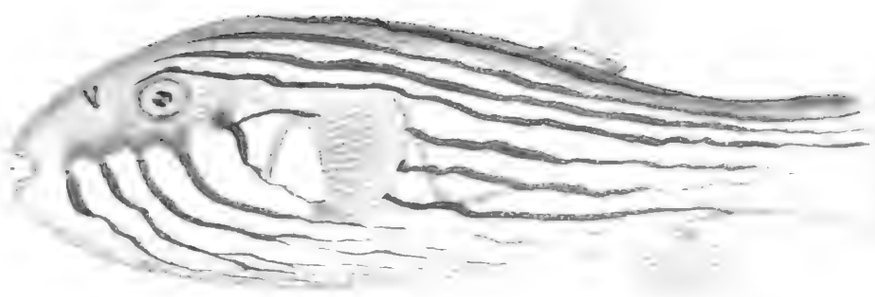
This minute specimen, of which I have seen only one example, is allied to Y. microcephalus, Gouldian, Bennett. The former species is figured and described in the Zoology of the Voyage of the Sulphur, and is more slender than this species. The muzzle is longer and more slender, and the character of the marginal cuffs considerably different.

The general form is rounded and wedge-shaped, more so than the centrical species. The head compares as 1 to 3 with the body, and the thickness at the ear equals half its length, or one-sixth of the total length. The upper line of the muzzle is nearly straight, and the eye is about one diameter as compared to the length of the head. The ear is seven-tenths of an inch in length, and reaches to the upper line of profile, just three tenths of an inch from the end of the muzzle, and that distance from each other across the interocular space, which latter is flat or slightly concave. The eye is short and obtuse. The feet and the body are not very [illegible]

Color (in spirits) dark [illegible] on the back beneath, and except the belly covered with a profusion of [illegible] blue small [illegible] with white [illegible] the upper lips on the back, and [illegible] edged stripes [illegible]



Tetrodon solanari
in Allgaster Bej.



Tetrodon

Tetrodon

[illegible]

Lindia [illegible] 24

Lycosidae, Dolomedes.

The head is broader in [illegible] broad as long, which latter measure is [illegible] of the total length of the [illegible] surface is flattened [illegible] convex, bearing on the [illegible] which latter are [illegible] in shape, and their diameter equals one-fourth the [illegible] of the head. The [illegible] eyes, the upper [illegible] are in advance of the [illegible] converge. The [illegible] of the [illegible] is about equal to the depth of the body, and both [illegible] outlines are [illegible] the mouth [illegible] except the mandible, the [illegible] in a space equal to the [illegible] fine, [illegible] slender strong spines. The [illegible] top of the head are the largest and more [illegible] than the others, all becoming shorter on the [illegible] part, and the central [illegible] exhibits but few [illegible] between the upper and lower portions. Each spine springs [illegible] roots [illegible] that they are shaped like the letter T, and each [illegible] dendritic pattern [illegible]

The [illegible]

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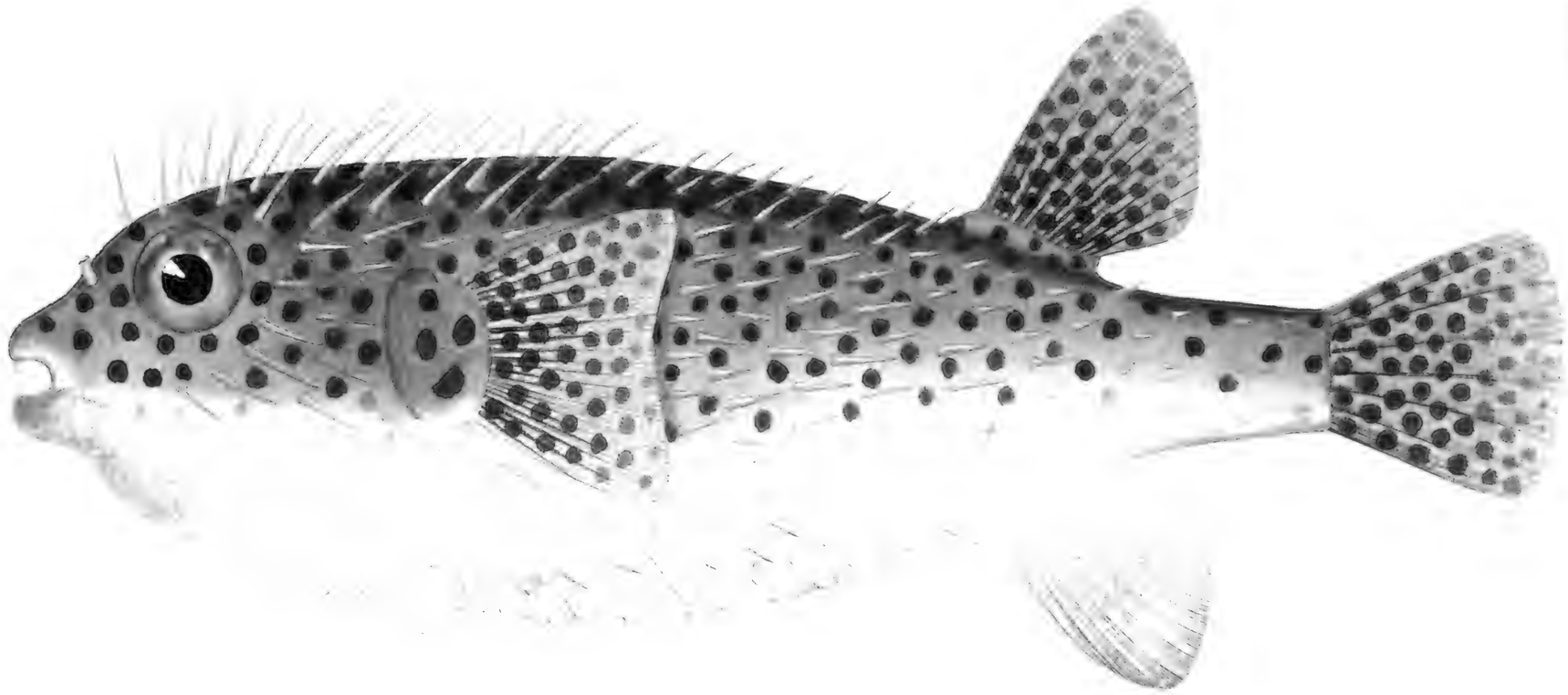


Diodon hystrix

Raidia gracilentoides Ayres.

D. 17; A. 13; L. 1. 17. 1.

This species is short and very broad, depressed along the dorsal region, and the head comprises a little more than the total length, caudal excluded. The muzzle is even shorter than in the preceding species, and more precipitate in its descent to the interocular space. Its upper line is considerably convex, and the thick lips are fleshy. The eyes are large, being situated much nearer to the end of the snout than the gill openings. The bone space between the eyes is somewhat flat, not concave. The spines which are shorter than in D. dorsimaculata are most developed immediately behind the pectorals, and each spring from three roots. They extend as far as the muzzle, posteriorly to the end of the anal base, and smooth spaces may be observed round the eyes and base of fins.

The anterior fins are small, rounded off at their ends, and the dorsal and anal are not so oblique on their exterior margins as in the preceding species. The pectoral fins are shaped the same as in D. dorsimaculata but situated higher up in a horizontal line with the eyes.

The upper parts of the head and body are of a pale fawn colour, passing into grayish along the flanks and white beneath. The dorsal region is orna-

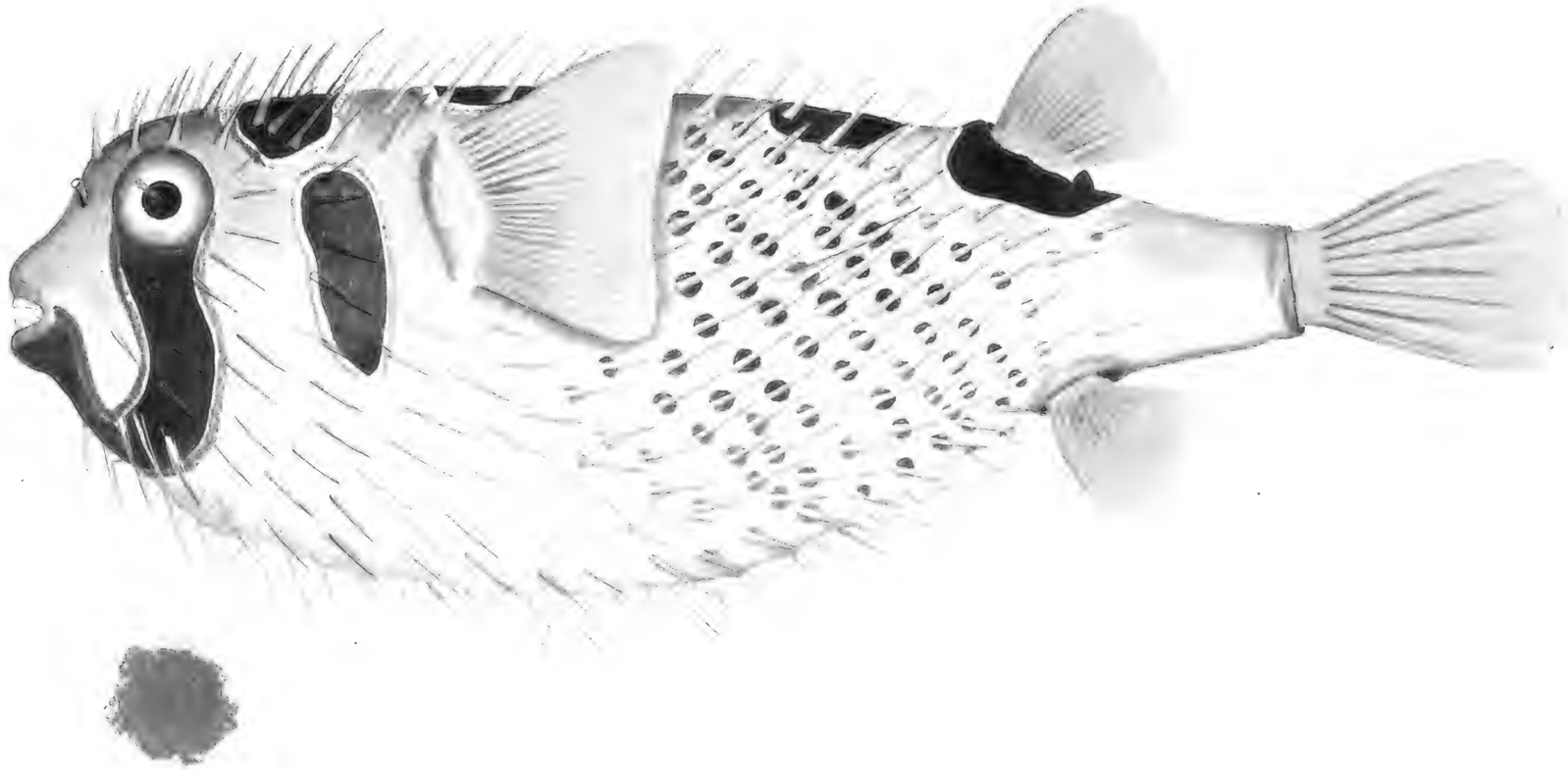
mented

with five very large blackish brown spots which are margined with white; one elongate oval in shape, covers the occiput, an oval one above each pectoral fin, a transverse oval one in advance of the dorsal fin, and the last includes the base of the tail, and partially oblong similar colored spot in advance of each gill aperture, and a diffused band of the same color starting from the lower limb of each orbit, descending to cross the upper part of the head, whence it suddenly curves up to the lower jaw and joins the one on the opposite side. Color brown becoming silvery toward the corners, which latter is dark black. Fins light yellow.

Length 11 inches.

Hab. Lewis & Clark.

A very rare species called by the Indians Yo-ta-ca.



Diodon bleekeri

(Gebellschaft-Sup.)

Tat. 178.

Diodon hisogenys.

C.V., A.V., P.V., C.V.

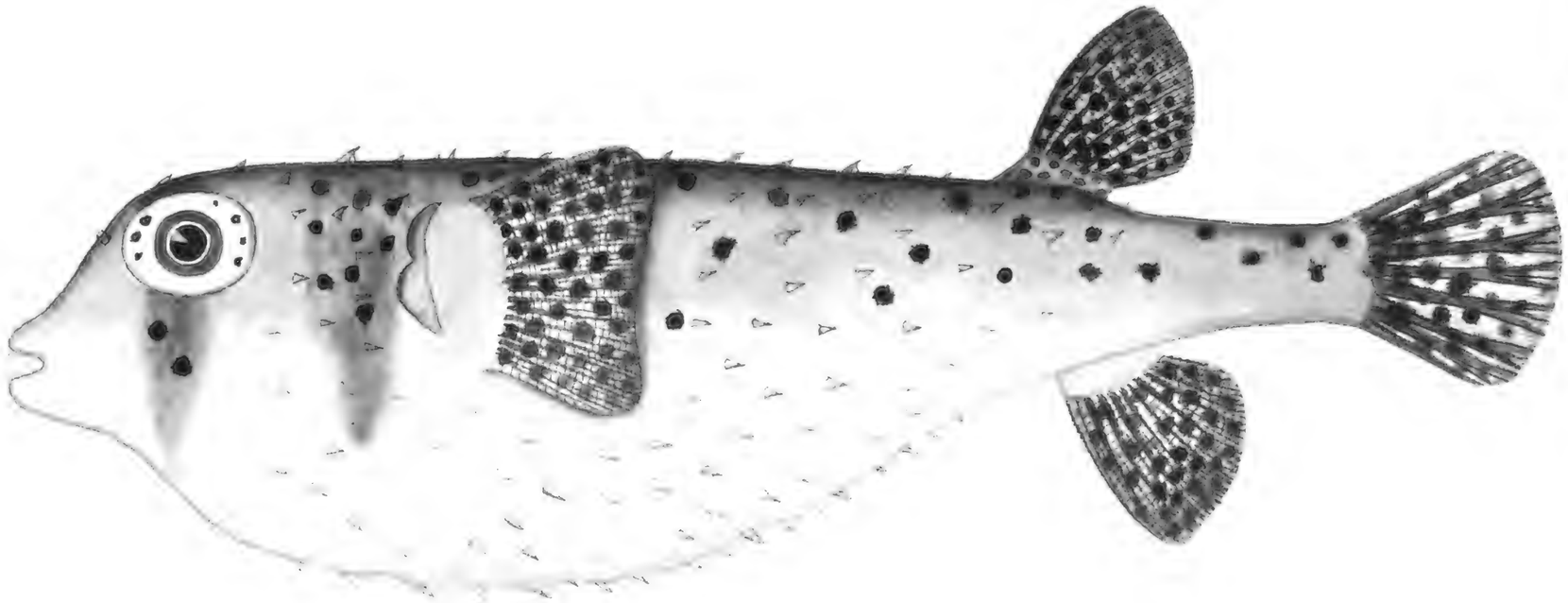
Of this species Cuvier gives no detailed description except a table from a colored drawing.

As viewed in front it has a slender appearance and the belly is tumid, and retractable with many furrows. The spines are most numerous on the belly, and excepting the interocular space not extending beyond the hinder limb of the orbits. They extend back as far as the end of the dorsal base. The head comprises more than a fourth of the fish and the eyes are very large, high in orbit and in shape, and configurous to the upper line of profile. The muzzle is short. All the fins, except the pectorals are small.

The dorsal region is blackish brown becoming pale on the flanks, and white beneath. Upper parts maculated with small round black spots.

Length 14 inches.

Hab. Sandwich Isl.



Chilomycterus hisogenys
(Tautria/ Sepalu)
Tay.

Orthagoriscus. [illegible]

The general form of the [illegible] is oblong oval, slightly compressed [illegible] greatest [illegible] the body which is [illegible] vertical with the base of the pectoral [illegible] is just half the total length of the fish. The posterior extremity [illegible] in its outline. The dorsal and [illegible] lines are very similarly arched, the skin is thick and [illegible] with small papillae. The head is short and [illegible] in front, being as compared to the total length [illegible] the [illegible] profile of the head is thus a slight concave depression in front of the eyes. The eyes are small and provided with a flesh and which at the [illegible] completely covers them in front of the eyes. There is an elongate depression in which are situated the nostrils, [illegible] in number, approximating and of an oblong shape. Cheeks inflate [illegible] so that any [illegible] of liquid [illegible] warmer cock with a [illegible] as in the genus [illegible].

The dorsal and anal are opposite, similar in shape and triangular, equal [illegible] points are [illegible] on the posterior portion of the body. The pectoral are small [illegible] on a horizontal line with the mouth. Caudal [illegible] passes into [illegible] on the [illegible] beneath. Body [illegible] with [illegible].

The following series of measurements were taken from the [illegible]

	Feet — Inches
Total length	6 — 10
Greatest depth body	3 — 5
Dorsal fin to tip of tail fin	1 — 9
Length of dorsal fin	2 — 9
Length of pectorals	1 — 0
Diameter eye	2 3/4

Probable weight 500 lbs.

The specimen examined was captured in Lat. 46° 38' 15" S., Lat 00-44' South, Pacific Ocean. The stomach contained half digested remains of Cephalopoda and Porpoise

Orthagoriscus mola

Cuscheuzites multiplicatus Cope.

[illegible] of this genus [illegible] the [illegible] length of [illegible] the [illegible]

The color is grayish white, beneath and sides is [illegible] yellowish white. All the fins more or less tipped with deep black.

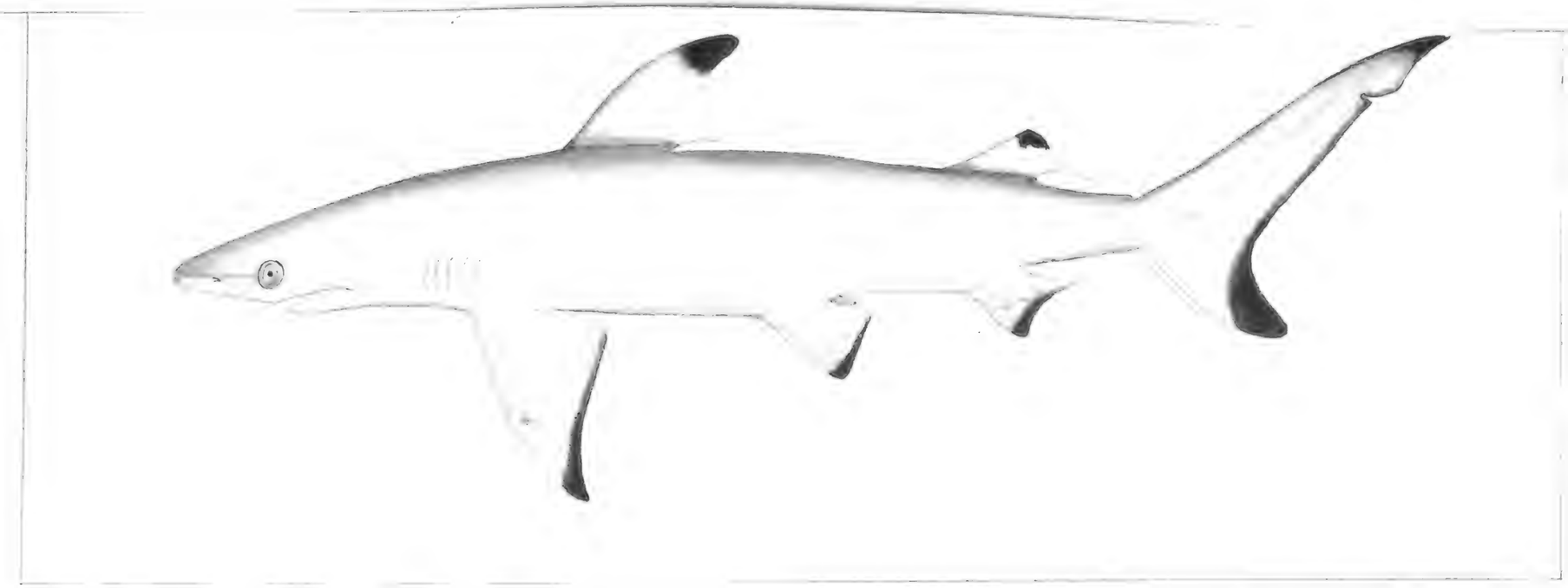
The head, seen on the anterior gill opening, is [illegible] of the total length. It [illegible] in profile is [illegible] convex, gently curved from the tip of the snout to the ~~[illegible]~~ origin of the dorsal fin. The [illegible] defined and [illegible]. The mouth just behind the eyes falls a little short of eight times in the total length. The nostrils are [illegible] and in such a way that they are on the [illegible] of the [illegible] the mouth is about midway between the eyes and the end of the snout. [illegible] pores each [illegible] the single [illegible] although not [illegible] the teeth are [illegible] strongly [illegible] from side to side. The teeth in the upper [illegible] are disposed in two [illegible] series, with some [illegible] in the [illegible] the teeth are more slender than the upper.

The depth is [illegible] slender, the greatest depth at the origin of the first dorsal [illegible]

the length and the thickness at the same place is two thirds the above measured depth.

The first dorsal is placed nearer to the end of the snout than the base of the ventral fin, at a point intervening between the pectoral and ventral bases. Its height is slightly the depth of the body beneath it, or less, and its extremity is slightly concave. The second dorsal is separated from the first by a free space equal to the length of the head (see plate). The anal is the same size, shape, and place opposite to the fin above. There is a free space between the anal and caudal, the latter being as distant from the eye as the gill openings. (shape of the other fins see plate)

Mat. — [illegible], Pulo.



Carcharias melanopterus

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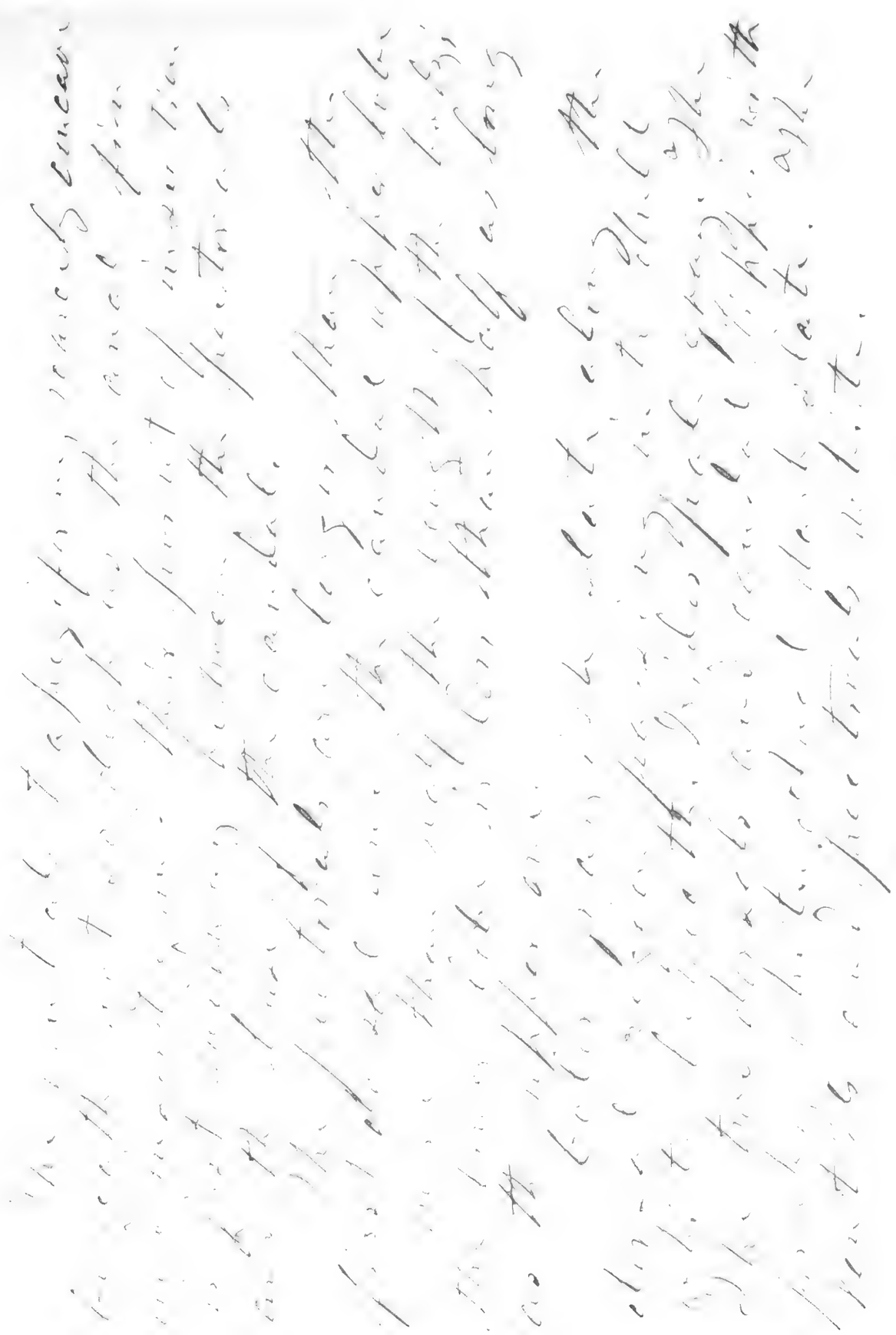

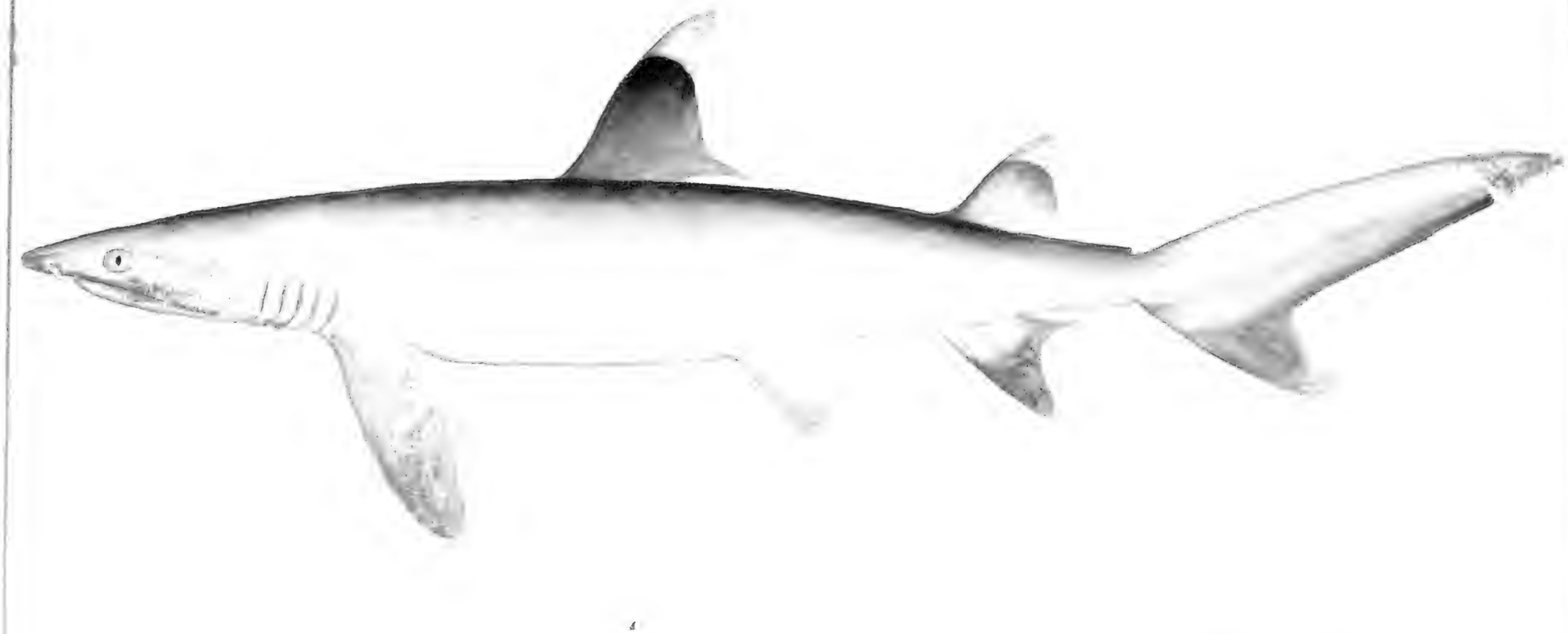

Triakis obesus

Zygaena No 395

A specimen of this species now before me measures 23 inches in total length. Dr. Th attains a length of 9 to 10 feet. The native who brought in the specimen says that there were about 20 taken from the adult female. The native name is Ho-ta ma-ta

The outline is nearly elliptical, both upper and lower outlines nearly similar in their curvature. The greatest depth of the body, which takes place at the base of the first dorsal is as compared to the total length as three to nineteen, and the thickness at the same point is a little more than half the depth just alluded to. The integuments are slightly asperous when the hand is drawn anteriorly over the surface. The lateral diameter of the head as compared to the total length of the fish is as one to fourteen. The anterior margin is arched and undulated, measuring to the first branchial fissure, the head extends six and a half times in the entire length, lower jaw barely projecting.

The anterior dorsal fin is a little nearer to the pectorals than the ventrals; its height is a trifle less than one-eighth of the total length of the fish and its upper margin is deeply emarginate. The second dorsal is separated from the first by a space equal to the distance between the pectorals and ventrals. (From sec plate) The anal fin is a little larger than the

fin above, more anterior, the emargination in its lower edge more profound than that fins. The ventrals are separated from the anal by a space nearly equal to the first dorsal base, and a little nearer to the latter fin, than to the second dorsal. (Form see plate.) The pectorals are a little in advance of the front dorsal. (Form see Pl.) The upper lobe of the caudal fin in length equals the entire space between the pectorals and ventrals. The lower lobe as compared to the upper is as two to five (Form see plate.)

Color bluish gray, white beneath.

Hab.— Society Isls.

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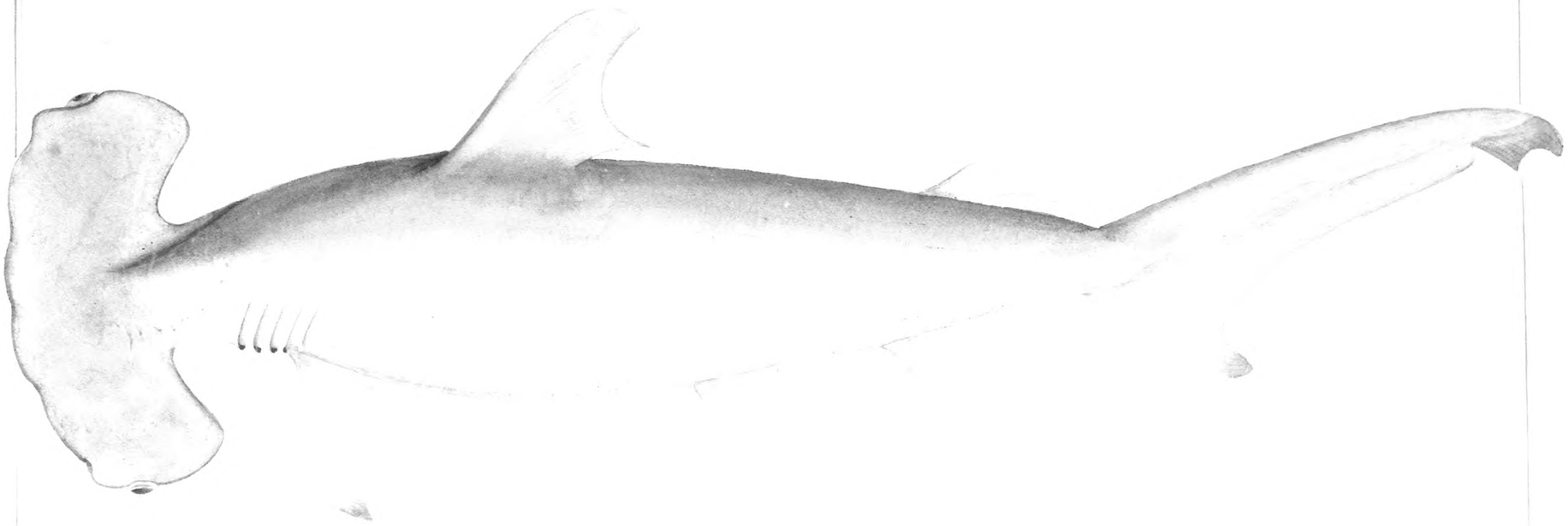

Zygaena zygaena

No 370

Aetobatis narinari

Gonirostris meleagris, Agass.

Proceedings Boston Society of Natural History, Vol. 6, p. 385. 1858

The length of the disk which is wide rhomboidal is smooth, measuring from the end of the snout to the hinder termination of the pectorals is as compared to the greatest width eleven and a half to twenty and a half. The width being much greater than the length, the measurement being in inches. The anterior outline from tip to tip of the pectorals is gently and regularly arched, the arch interrupted by the prominent head. The posterior margins of the pectorals are but slightly concave and minutely crenulated. There is a large deep furrow on the top of the head formed by the prominent orbits in front, and reaching behind the spiracles. Snout acute, rounded, produced and slightly turned upward. Spiracles just behind the orbits, oblong oblique. The eyes which are not visible from above are ovalish and their cornea is vertical elliptical. There are five pairs of branchial fissures beneath. The palate is the widest behind, the plates obtuse angular with their rounded edges anterior. The ventrals are small, rounded behind and extend much behind the pectorals. There is a small quadrangular fin on the tail just in advance of the spine. The tail is very much elongated, slender, and in the specimen now before us measures